AIRFIELD & TERMINAL MODERNIZATION PROJECT

LOS ANGELES INTERNATIONAL AIRPORT (LAX)



DRAFT ENVIRONMENTAL IMPACT REPORT (DRAFT EIR)

Main Text

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City of Los Angeles

Los Angeles World Airports

LOS ANGELES WORLD AIRPORTS

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PREAMBLE

This Draft Environmental Impact Report has been prepared pursuant to the California Environmental Quality Act (CEQA) to inform the public and decision-makers about the environmental impacts of the proposed Los Angeles International Airport (LAX) Airfield and Terminal Modernization Project (proposed Project). Los Angeles World Airports, the lead agency for the proposed Project, published the Notice of Preparation for the proposed Project in April 2019. Therefore, this Draft EIR was well underway prior to the COVID-19 global pandemic, which emerged in early 2020.

As of the publication date of this Draft EIR, the severity and duration of the contraction in aviation activity resulting from the COVID-19 global pandemic are still unknown. Governments, airlines, and airports around the world are still in the process of identifying and implementing regulations and processes to reduce public health risks. Identification of a treatment for COVID-19 will support a more meaningful recovery beyond the modest recent increase in aviation activity that has occurred during the summer and fall of 2020. A full recovery to pre-pandemic levels of aviation activity will likely require the development and widescale deployment of a vaccine to treat COVID-19. The timing of both of these medical events is unknown.

The Federal Aviation Administration (FAA) addressed these uncertainties in the 2020-2040 Aerospace Forecast report, published in March 2020, as follows:

> *The rapid spread of the novel coronavirus (COVID-19) that began in early 2020 now presents a new risk without clear historical precedent. Although the FAA forecast is a long-term trend forecast and does not focus on short-term perturbations, the great uncertainty surrounding the impact of the virus leaves open the possibility that it could affect values for 2020 and 2021. This uncertainty arises from not being able to assess the spread or intensity of the human consequences, whether within the U.S. or abroad, as well as the breadth and depth of possible economic fallout.*[1]

Over the long-term, demand for air travel and airline activity is expected to grow consistent with the parameters used in developing the aviation forecasts for the proposed Project (e.g., U.S. Gross Domestic Product (GDP), population, employment, and income). This is evidenced by the economic and aviation activity recovery recorded over the last decades after disruptive events, such as the terrorist attacks on September 11, 2001 and the 2008 U.S. recession. As per any long-term forecast, it is assumed that periods of declines will be followed by periods of rebound in air travel demand, following cycles in domestic and international economies. Thus, the long-term forecasts developed for the proposed Project and documented in this Report are still valid and relevant for the long-term planning purposes of the LAX Airfield and Terminal Modernization Project environmental analyses.

[1] U.S. Department of Transportation, Federal Aviation Administration, *FAA Aerospace Forecast - Fiscal Years 2020-2040*, March 2020, p. 64. Available: https://www.faa.gov/data_research/aviation/aerospace_forecasts/media/FY2020-40_FAA_Aerospace_Forecast.pdf.

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Table of Contents

1. Introduction and Executive Summary 1-1
1.1 Summary of the Proposed Project 1-1
1.1.1 Project Overview 1-1
1.1.2 Project Location 1-1
1.1.3 Project Objectives 1-4
1.1.4 Project Characteristics 1-5
1.2 Purpose of this Draft EIR 1-11
1.3 Organization of this Draft EIR 1-12
1.4 Summary of Environmental Impacts 1-14
1.4.1 Significant Unavoidable Impacts 1-24
1.5 Alternatives Evaluated in the Draft EIR 1-25
1.5.1 Environmentally Superior Alternative 1-28
1.5.1.1 Alternative 1 – No Project 1-32
1.5.1.2 Alternative 2 – Concourse 0 Only 1-32
1.5.1.3 Alternative 3 – Terminal 9 Only 1-33
1.5.1.4 Alternative 4 – Approved LAMP Roadway System plus Terminal 9 Access 1-34
1.5.1.5 Environmentally Superior Alternative 1-34
1.6 Areas of Known Controversy and Issues to be Resolved 1-35

2. Description of the Proposed Project 2-1
2.1 Project Overview 2-1
2.2 Project Location 2-1
2.2.1 Regional Setting 2-1
2.2.2 Local Setting and Land Uses 2-4
2.3 Project Objectives 2-4
2.3.1 Background 2-4
2.3.1.1 Background Related to Proposed Improvements 2-9
2.3.1.1.1 Airfield Improvements 2-9
2.3.1.1.2 Terminal Improvements 2-9
2.3.1.1.3 Landside Improvements 2-10
2.3.1.2 Projected Future Growth at LAX 2-15
2.3.1.2.1 SCAG Regional Aviation Activity Forecast 2-15
2.3.1.2.2 LAX Aviation Activity Forecast 2-16
2.3.2 Objectives 2-18
2.3.2.1 Underlying Purpose of the Project 2-18
2.3.2.2 Specific Objectives of the Project 2-18
2.4 Project Elements 2-19
2.4.1 Airfield Elements 2-20
2.4.1.1 Taxiway D Extension West 2-20
2.4.1.2 Runway 6L-24R Exits 2-20
2.4.2 Terminal Area Elements 2-24
2.4.2.1 Concourse 0 2-24
2.4.2.2 Terminal 9 2-27
2.4.2.3 Removal/Replacement of West Remote Gates 2-38
2.4.3 Landside Elements 2-39

2.4.3.1 Characteristics 2-39
2.4.3.2 Relationship to Airspace/Airfield Surfaces 2-40
2.4.3.2.1 Part 77 Surfaces 2-40
2.4.3.2.2 Runway Protection Zones 2-40
2.4.4 Utilities 2-56
2.4.5 Sustainability 2-58
2.5 Enabling Projects 2-61
2.5.1 Enabling Projects, Facilities, and/or Activities 2-61
2.5.2 Property Acquisition 2-75
2.5.3 Easements and Acquisition for Roadway Improvements 2-76
2.6 Construction 2-77
2.6.1 Phasing 2-77
2.6.2 Construction Staging and Contractor Parking 2-78
2.6.3 Construction Haul Routes 2-82
2.6.4 Temporary Runway Closures During Construction 2-82
2.6.5 Temporary Access During Construction 2-82
2.6.5.1 CTA Access 2-82
2.6.5.2 Terminal 9 Access 2-83
2.7 Entitlements 2-85
2.8 Intended Uses of this EIR 2-85
2.8.1 Federal Actions 2-85
2.8.2 State and Regional Actions 2-86
2.8.3 Local Actions 2-86

3. Overview of Project Setting 3-1
3.1 Introduction 3-1
3.2 Land Use Setting 3-1
3.3 Environmental Setting 3-2
3.3.1 Air Quality 3-2
3.3.2 Cultural Resources (Historical Resources) 3-2
3.3.3 Energy 3-3
3.3.4 Greenhouse Gas Emissions 3-3
3.3.5 Hazardous Materials 3-3
3.3.6 Noise 3-4
3.3.7 Transportation 3-4
3.3.8 Utilities 3-5
3.4 Development Setting 3-5

4. Environmental Impact Analysis 4-1

4.1 Air Quality and Human Health Risk 4.1.1-1

4.1.1 Air Quality 4.1.1-1
4.1.1.1 Introduction 4.1.1-1
4.1.1.1.1 Pollutants of Interest 4.1.1-2
4.1.1.1.1.1 Ozone (O_3) 4.1.1-3
4.1.1.1.1.2 Nitrogen Dioxide (NO_2) 4.1.1-3
4.1.1.1.1.3 Carbon Monoxide (CO) 4.1.1-4
4.1.1.1.1.4 Particulate Matter (PM_{10}) and Fine Particulate Matter ($PM_{2.5}$) 4.1.1-4

4.1.1.1.1.5 Sulfur Dioxide (SO_2) 4.1.1-4
4.1.1.1.2 Scope of Analysis 4.1.1-5
4.1.1.1.2.1 Construction 4.1.1-5
4.1.1.1.2.2 Operations 4.1.1-5
4.1.1.2 Methodology 4.1.1-5
4.1.1.2.1 Emission Source Types – Construction 4.1.1-6
4.1.1.2.1.1 Off-Road Equipment 4.1.1-6
4.1.1.2.1.2 On-Road On-Site Equipment 4.1.1-7
4.1.1.2.1.3 On-Road Off-Site Equipment 4.1.1-7
4.1.1.2.1.4 Fugitive Dust 4.1.1-7
4.1.1.2.1.5 Fugitive VOCs 4.1.1-8
4.1.1.2.2 Dispersion Modeling – Construction 4.1.1-8
4.1.1.2.3 Emission Source Types – Operations 4.1.1-9
4.1.1.2.3.1 Aircraft 4.1.1-9
4.1.1.2.3.2 GSE and APU 4.1.1-11
4.1.1.2.3.3 Ground Access Vehicles (GAV) 4.1.1-13
4.1.1.2.3.4 Stationary Sources 4.1.1-13
4.1.1.2.4 Dispersion Modeling – Operations 4.1.1-13
4.1.1.2.5 Other Dispersion Model Inputs 4.1.1-14
4.1.1.2.6 Photochemical Modeling; Health Impacts of Secondary Air Pollutants 4.1.1-14
4.1.1.2.6.1 Background 4.1.1-14
4.1.1.2.6.2 Recent Evaluations of Secondary Air Pollutant Health Impacts 4.1.1-15
4.1.1.2.7 Existing LAWA Policies and Proposed Project Features 4.1.1-18
4.1.1.3 Existing Conditions 4.1.1-20
4.1.1.3.1 Regulatory Setting 4.1.1-20
4.1.1.3.1.1 Federal 4.1.1-20
4.1.1.3.1.2 State 4.1.1-22
4.1.1.3.1.3 Regional 4.1.1-23
4.1.1.3.1.4 LAWA Plans and Policies 4.1.1-25
4.1.1.3.2 Environmental Setting 4.1.1-28
4.1.1.3.2.1 Climatological Conditions 4.1.1-28
4.1.1.3.2.2 Existing Ambient Air Quality 4.1.1-29
4.1.1.4 Thresholds of Significance 4.1.1-31
4.1.1.4.1 Regional Emissions Thresholds 4.1.1-32
4.1.1.4.1.1 Scenarios Used to Determine Significance for Emissions 4.1.1-34
4.1.1.4.2 Local Concentration Thresholds 4.1.1-34
4.1.1.4.2.1 Scenarios Used to Determine Significance for Local Concentrations 4.1.1-36
4.1.1.4.2.2 Determination of Background Concentrations 4.1.1-37
4.1.1.5 Project Impacts 4.1.1-37
4.1.1.5.1 Impact 4.1.1-1 ..... 4.1.1-37
4.1.1.5.1.1 Construction Impacts 4.1.1-37
4.1.1.5.1.2 Mitigation Measures 4.1.1-42

4.1.1.5.1.3 Significance of Impact After Mitigation 4.1.1-43
4.1.1.5.2 Impact 4.1.1-2 ..... 4.1.1-44
4.1.1.5.2.1 Operations Impacts 4.1.1-44
4.1.1.5.2.2 Mitigation Measures 4.1.1-49
4.1.1.5.2.3 Significance of Impact After Mitigation 4.1.1-50
4.1.1.5.3 Impact 4.1.1-3 ..... 4.1.1-50
4.1.1.5.3.1 Construction Impacts 4.1.1-50
4.1.1.5.3.2 Mitigation Measures 4.1.1-51
4.1.1.5.3.3 Significance of Impact After Mitigation 4.1.1-51
4.1.1.5.4 Impact 4.1.1-4 ..... 4.1.1-51
4.1.1.5.4.1 Operations Impacts 4.1.1-52
4.1.1.5.4.2 Mitigation Measures 4.1.1-57
4.1.1.5.4.3 Significance of Impact After Mitigation 4.1.1-58
4.1.1.6 Cumulative Impacts 4.1.1-58
4.1.1.6.1 Cumulative Construction Impacts 4.1.1-58
4.1.1.6.2 Cumulative Operational Impacts 4.1.1-60
4.1.1.7 Summary of Impact Determinations 4.1.1-60

4.1.2 Human Health Risk 4.1.2-1

4.1.2.1 Introduction 4.1.2-1
4.1.2.2 Methodology 4.1.2-1
4.1.2.2.1 TAC Emissions and Concentrations 4.1.2-1
4.1.2.2.2 Exposure Locations 4.1.2-2
4.1.2.2.3 Overview of Risk Assessment 4.1.2-3
4.1.2.2.3.1 Selection of TAC of Concern 4.1.2-3
4.1.2.2.3.2 Exposure Assessment 4.1.2-5
4.1.2.2.3.3 Toxicity Assessment 4.1.2-5
4.1.2.2.3.4 Risk Characterization 4.1.2-6
4.1.2.3 Existing Conditions 4.1.2-10
4.1.2.3.1 Regulatory Setting 4.1.2-10
4.1.2.3.1.1 Federal 4.1.2-10
4.1.2.3.1.2 State 4.1.2-10
4.1.2.3.1.3 Regional/Local 4.1.2-11
4.1.2.3.2 Environmental Setting 4.1.2-11
4.1.2.3.2.1 Sources of Toxic Air Contaminants of Concern 4.1.2-12
4.1.2.3.2.2 Exposed Populations 4.1.2-12
4.1.2.4 Thresholds of Significance 4.1.2-13
4.1.2.5 Project Impacts 4.1.2-13
4.1.2.5.1 Impact 4.1.2-1 ..... 4.1.2-13
4.1.2.5.1.1 Construction 4.1.2-14
4.1.2.5.1.2 Operations 4.1.2-16
4.1.2.5.1.3 Mitigation Measures 4.1.2-19
4.1.2.5.1.4 Significance of Impact After Mitigation 4.1.2-21
4.1.2.5.2 Impact 4.1.2-2 ..... 4.1.2-21
4.1.2.5.2.1 Construction 4.1.2-21
4.1.2.5.2.2 Operations 4.1.2-21
4.1.2.5.2.3 Mitigation Measures 4.1.2-21

4.1.2.5.2.4 Significance of Impact After Mitigation 4.1.2-22
4.1.2.5.3 Impact 4.1.2-3 .....4.1.2-22
4.1.2.5.3.1 Construction 4.1.2-22
4.1.2.5.3.2 Operations 4.1.2-24
4.1.2.5.3.3 Mitigation Measures 4.1.2-26
4.1.2.5.3.4 Significance of Impact After Mitigation 4.1.2-26
4.1.2.5.4 Impact 4.1.2-4 .....4.1.2-26
4.1.2.5.4.1 Construction 4.1.2-28
4.1.2.5.4.2 Operations 4.1.2-28
4.1.2.5.4.3 Mitigation Measures 4.1.2-32
4.1.2.5.4.4 Significance of Impact After Mitigation 4.1.2-32
4.1.2.5.5 Impact 4.1.2-5 .....4.1.2-32
4.1.2.5.5.1 Construction 4.1.2-34
4.1.2.5.5.2 Operations 4.1.2-35
4.1.2.5.5.3 Mitigation Measures 4.1.2-37
4.1.2.5.5.4 Significance of Impact After Mitigation 4.1.2-37
4.1.2.5.6 Human Health Risk Assessment (HHRA) Summary.....4.1.2-38
4.1.2.6 Cumulative Impacts 4.1.2-39
4.1.2.6.1 Cancer Risks 4.1.2-39
4.1.2.6.2 Chronic Non-Cancer Hazards 4.1.2-40
4.1.2.6.3 Acute Non-Cancer Hazards 4.1.2-40
4.1.2.6.4 Summary of Cumulative Impacts 4.1.2-41
4.1.2.7 Summary of Impact Determinations 4.1.2-42

4.2 Cultural Resources (Historical Resources) 4.2-1
4.2.1 Introduction 4.2-1
4.2.2 Methodology 4.2-3
4.2.3 Existing Conditions 4.2-3
4.2.3.1 Regulatory Setting 4.2-3
4.2.3.1.1 Federal 4.2-3
4.2.3.1.2 State 4.2-5
4.2.3.1.3 Local 4.2-7
4.2.3.2 Environmental Setting 4.2-10
4.2.3.2.1 Historical Development of LAX.....4.2-10
4.2.3.2.2 Eligible Historical Resources.....4.2-10
4.2.4 Thresholds of Significance 4.2-13
4.2.5 Project Impacts 4.2-13
4.2.5.1 Impact 4.2-1 .....4.2-13
4.2.5.1.1 Impacts to Individual Historical Resources 4.2-13
4.2.5.1.2 Summary of Impacts 4.2-16
4.2.5.1.3 Mitigation Measures 4.2-16
4.2.5.1.4 Significance of Impact After Mitigation 4.2-17
4.2.6 Cumulative Impacts 4.2-17
4.2.7 Summary of Impact Determinations 4.2-17

4.3 Energy 4.3-1
4.3.1 Introduction 4.3-1
4.3.2 Methodology 4.3-1

4.3.2.1 Electricity/Natural Gas 4.3-1
4.3.2.2 Mobile Source and Transportation-Related Fuels 4.3-2
4.3.2.2.1 Construction 4.3-3
4.3.2.2.2 Operations 4.3-3
4.3.3 Existing Conditions 4.3-4
4.3.3.1 Regulatory Setting 4.3-4
4.3.3.1.1 Federal 4.3-4
4.3.3.1.2 State 4.3-5
4.3.3.1.3 Local 4.3-7
4.3.3.2 Environmental Setting 4.3-9
4.3.3.2.1 Electricity 4.3-9
4.3.3.2.2 Natural Gas 4.3-10
4.3.3.2.3 Mobile Source and Transportation-Related Fuels 4.3-11
4.3.4 Thresholds of Significance 4.3-11
4.3.5 Project Impacts 4.3-12
4.3.5.1 Impact 4.3-1 ..... 4.3-12
4.3.5.1.1 Construction 4.3-12
4.3.5.1.2 Operations 4.3-14
4.3.5.1.3 Mitigation Measures 4.3-19
4.3.5.1.4 Significance of Impact After Mitigation 4.3-20
4.3.5.2 Impact 4.3-2 ..... 4.3-20
4.3.5.2.1 Construction and Operations 4.3-20
4.3.5.2.2 Mitigation Measures 4.3-21
4.3.5.2.3 Significance of Impact After Mitigation 4.3-21
4.3.6 Cumulative Impacts 4.3-21
4.3.7 Summary of Impact Determinations 4.3-22

4.4 Greenhouse Gas Emissions 4.4-1
4.4.1 Introduction 4.4-1
4.4.1.1 Predicted Global and Local Climate Change 4.4-1
4.4.1.2 Greenhouse Gases 4.4-2
4.4.2 Methodology 4.4-3
4.4.2.1 Construction 4.4-4
4.4.2.2 Operations 4.4-5
4.4.2.3 Existing LAWA Policies and Proposed Project Features 4.4-5
4.4.3 Existing Conditions 4.4-7
4.4.3.1 Regulatory Setting 4.4-7
4.4.3.1.1 International 4.4-7
4.4.3.1.2 Federal 4.4-10
4.4.3.1.3 State 4.4-13
4.4.3.1.4 Regional 4.4-19
4.4.3.1.5 Local 4.4-19
4.4.3.2 Environmental Setting 4.4-23
4.4.3.2.1 Statewide GHG Emissions 4.4-23
4.4.3.2.2 Existing LAX GHG Emissions 4.4-24
4.4.4 Thresholds of Significance 4.4-25
4.4.5 Project Impacts 4.4-26

4.4.5.1 Impact 4.4-1 ..... 4.4-26
4.4.5.1.1 Construction 4.4-26
4.4.5.1.2 Operations 4.4-27
4.4.5.1.3 Conclusion 4.4-31
4.4.5.1.4 Mitigation Measures 4.4-31
4.4.5.1.5 Significance of Impact After Mitigation 4.4-33
4.4.5.2 Impact 4.4-2 ..... 4.4-34
4.4.5.2.1 Construction and Operations 4.4-34
4.4.5.2.2 Mitigation Measures 4.4-38
4.4.5.2.3 Significance of Impact After Mitigation 4.4-38
4.4.6 Cumulative Impacts 4.4-39
4.4.7 Summary of Impact Determinations 4.4-39

4.5 Hazardous Materials 4.5-1
4.5.1 Introduction 4.5-1
4.5.2 Methodology 4.5-4
4.5.3 Existing Conditions 4.5-5
4.5.3.1 Regulatory Setting 4.5-5
4.5.3.1.1 Federal 4.5-5
4.5.3.1.2 State 4.5-6
4.5.3.1.3 Regional and Local 4.5-6
4.5.3.1.4 Agencies with Authority Over Remediation of Contaminated Sites 4.5-7
4.5.3.2 Environmental Setting 4.5-8
4.5.3.2.1 Hazardous Materials Study Area 4.5-8
4.5.3.2.2 Known Contamination within the Hazardous Materials Study Area 4.5-8
4.5.3.2.3 Other Areas of Interest 4.5-13
4.5.4 Thresholds of Significance 4.5-15
4.5.5 Project Impacts 4.5-15
4.5.5.1 Impact 4.5-1 ..... 4.5-15
4.5.5.1.1 Construction 4.5-15
4.5.5.1.2 Operations 4.5-18
4.5.5.1.3 Mitigation Measures 4.5-18
4.5.5.1.4 Significance of Impact After Mitigation 4.5-18
4.5.5.2 Impact 4.5-2 ..... 4.5-18
4.5.5.2.1 Construction 4.5-19
4.5.5.2.2 Operations 4.5-19
4.5.5.2.3 Mitigation Measures 4.5-20
4.5.5.2.4 Significance of Impact After Mitigation 4.5-20
4.5.6 Cumulative Impacts 4.5-20
4.5.7 Summary of Impact Determinations 4.5-21

4.6 Land Use and Planning 4.6-1
4.6.1 Introduction 4.6-1
4.6.2 Methodology 4.6-1
4.6.3 Existing Conditions 4.6-3
4.6.3.1 Regulatory Setting 4.6-3

4.6.3.1.1 Regional Plans 4.6-3
4.6.3.1.2 City of Los Angeles Plans 4.6-7
4.6.3.1.3 Plans of Other Jurisdictions within the Study Area 4.6-17
4.6.3.2 Environmental Setting 4.6-18
4.6.3.2.1 Project Area 4.6-18
4.6.3.2.2 Surrounding Area 4.6-20
4.6.4 Thresholds of Significance 4.6-21
4.6.5 Project Impacts 4.6-22
4.6.5.1 Impact 4.6-1 ..... 4.6-22
4.6.5.1.1 Consistency with Regional Plans 4.6-22
4.6.5.1.2 Consistency with City of Los Angeles Plans 4.6-24
4.6.5.1.3 Consistency with Plans of Other Jurisdictions within the Study Area 4.6-35
4.6.5.1.4 Mitigation Measures 4.6-35
4.6.5.1.5 Significance of Impact After Mitigation 4.6-35
4.6.6 Cumulative Impacts 4.6-35
4.6.7 Summary of Impact Determinations 4.6-36

4.7 Noise 4.7.1-1

4.7.1 Aircraft Noise 4.7.1-1

4.7.1.1 Introduction 4.7.1-1
4.7.1.1.1 General Characteristics of Noise 4.7.1-1
4.7.1.1.2 Noise Descriptors 4.7.1-2
4.7.1.1.3 Effects of Noise on Humans 4.7.1-6
4.7.1.2 Methodology 4.7.1-14
4.7.1.2.1 Aircraft Noise Modeling 4.7.1-14
4.7.1.2.2 Changes in CNEL 4.7.1-16
4.7.1.2.3 Classroom Disruption 4.7.1-17
4.7.1.3 Existing Conditions 4.7.1-18
4.7.1.3.1 Regulatory Setting 4.7.1-18
4.7.1.3.1.1 Federal 4.7.1-18
4.7.1.3.1.2 State 4.7.1-22
4.7.1.3.1.3 Local 4.7.1-22
4.7.1.3.2 Environmental Setting 4.7.1-26
4.7.1.3.2.1 Existing Baseline Aircraft Noise Exposure 4.7.1-26
4.7.1.4 Thresholds of Significance 4.7.1-30
4.7.1.5 Project Impacts 4.7.1-31
4.7.1.5.1 Impact 4.7.1-1 ..... 4.7.1-32
4.7.1.5.1.1 Construction 4.7.1-39
4.7.1.5.1.2 Operations 4.7.1-41
4.7.1.5.1.3 Mitigation Measures 4.7.1-41
4.7.1.5.1.4 Significance of Impact After Mitigation 4.7.1-42
4.7.1.5.2 Impact 4.7.1-2 ..... 4.7.1-43
4.7.1.5.2.1 Construction 4.7.1-43
4.7.1.5.2.2 Operations 4.7.1-43
4.7.1.5.2.3 Mitigation Measures 4.7.1-44

4.7.1.5.2.4 Significance of Impact After Mitigation 4.7.1-44
4.7.1.5.3 Impact 4.7.1-3 .....4.7.1-44
4.7.1.5.3.1 Construction 4.7.1-44
4.7.1.5.3.2 Operations 4.7.1-45
4.7.1.5.3.3 Mitigation Measures 4.7.1-47
4.7.1.5.3.4 Significance of Impact After Mitigation 4.7.1-47
4.7.1.6 Cumulative Impacts 4.7.1-48
4.7.1.7 Summary of Impact Determinations 4.7.1-48

4.7.2 Roadway Traffic Noise 4.7.2-1
4.7.2.1 Introduction 4.7.2-1
4.7.2.1.1 General Characteristics of Roadway Traffic Noise 4.7.2-1
4.7.2.2 Methodology 4.7.2-2
4.7.2.2.1 Overview 4.7.2-2
4.7.2.2.1.1 Noise-Sensitive Receptors 4.7.2-2
4.7.2.2.1.2 Existing and Future Roadway Traffic Noise Conditions 4.7.2-4
4.7.2.2.1.3 Analysis of Combined Project-Related Noise 4.7.2-5
4.7.2.3 Existing Conditions 4.7.2-5
4.7.2.3.1 Regulatory Setting 4.7.2-5
4.7.2.3.2 Environmental Setting 4.7.2-7
4.7.2.4 Thresholds of Significance 4.7.2-9
4.7.2.5 Project Impacts 4.7.2-10
4.7.2.5.1 Impact 4.7.2-1 .....4.7.2-10
4.7.2.5.1.1 Operational Impacts 4.7.2-10
4.7.2.5.1.2 Mitigation Measures 4.7.2-11
4.7.2.5.1.3 Significance of Impact After Mitigation 4.7.2-11
4.7.2.5.2 Impact 4.7.2-2 .....4.7.2-11
4.7.2.5.2.1 Operational Impacts 4.7.2-11
4.7.2.5.2.2 Mitigation Measures 4.7.2-11
4.7.2.5.2.3 Significance of Impact After Mitigation 4.7.2-11
4.7.2.6 Combined Roadway Traffic Noise and Aircraft Noise 4.7.2-11
4.7.2.6.1 Mitigation Measures 4.7.2-13
4.7.2.6.2 Significance of Impact After Mitigation 4.7.2-13
4.7.2.7 Cumulative Impacts 4.7.2-13
4.7.2.8 Summary of Impact Determinations 4.7.2-14

4.7.3 Construction Traffic and Equipment Noise and Vibration 4.7.3-1
4.7.3.1 Introduction 4.7.3-1
4.7.3.1.1 General Characteristics of Construction-Related Noise 4.7.3-1
4.7.3.1.1.1 General Characteristics of Construction Traffic Noise 4.7.3-1
4.7.3.1.1.2 General Characteristics of Construction Equipment Noise 4.7.3-1
4.7.3.1.2 General Characteristics of Vibration 4.7.3-2

4.7.3.2 Methodology 4.7.3-2
4.7.3.2.1 Construction Traffic Noise 4.7.3-2
4.7.3.2.2 Construction Equipment Noise 4.7.3-3
4.7.3.2.3 Construction Equipment Vibration 4.7.3-7
4.7.3.3 Existing Conditions 4.7.3-7
4.7.3.3.1 Regulatory Setting 4.7.3-7
4.7.3.3.1.1 City of Los Angeles Noise Regulation 4.7.3-8
4.7.3.3.2 Environmental Setting 4.7.3-8
4.7.3.3.2.1 Noise 4.7.3-8
4.7.3.3.2.2 Vibration 4.7.3-8
4.7.3.4 Thresholds of Significance 4.7.3-9
4.7.3.4.1 Construction Traffic Noise 4.7.3-9
4.7.3.4.2 Construction Equipment Noise 4.7.3-9
4.7.3.4.3 Construction Equipment Vibration 4.7.3-10
4.7.3.5 Project Impacts 4.7.3-10
4.7.3.5.1 Impact 4.7.3-1 ..... 4.7.3-10
4.7.3.5.1.1 Construction Impacts 4.7.3-10
4.7.3.5.1.2 Mitigation Measures 4.7.3-11
4.7.3.5.1.3 Significance of Impact After Mitigation 4.7.3-12
4.7.3.5.2 Impact 4.7.3-2 ..... 4.7.3-12
4.7.3.5.2.1 Construction Impacts 4.7.3-12
4.7.3.5.2.2 Mitigation Measures 4.7.3-21
4.7.3.5.2.3 Significance of Impact After Mitigation 4.7.3-22
4.7.3.5.3 Impact 4.7.3-3 ..... 4.7.3-22
4.7.3.5.3.1 Construction Impacts 4.7.3-22
4.7.3.5.3.2 Mitigation Measures 4.7.3-23
4.7.3.5.3.3 Significance of Impact After Mitigation 4.7.3-23
4.7.3.6 Cumulative Impacts 4.7.3-24
4.7.3.6.1 Construction Traffic Noise 4.7.3-24
4.7.3.6.2 Construction Equipment Noise 4.7.3-24
4.7.3.6.3 Construction EquipmentVibration 4.7.3-26
4.7.3.7 Summary of Impact Determinations 4.7.3-26

4.8 Transportation 4.8-1

4.8.1 Introduction 4.8-1
4.8.1.1 Scenarios Evaluated in the Analysis 4.8-3
4.8.2 Methodology 4.8-3
4.8.2.1 Methodology for Assessing Conflicts with Programs, Plans, Ordinances, or Policies 4.8-3
4.8.2.2 Methodology for Assessing Project VMT 4.8-4
4.8.2.2.1 Project Travel Demand Model 4.8-4
4.8.2.2.2 Trip Generation Methodology 4.8-7
4.8.2.2.3 Methodology for Assessing VMT Impacts 4.8-9
4.8.2.3 Methodology for Assessing Induced VMT 4.8-14
4.8.2.3.1 Short-Term Induced VMT Methodology 4.8-16
4.8.2.3.2 Long-Term Induced VMT Methodology 4.8-16

4.8.2.4 Methodology for Evaluating Substantially Increased Hazards.....4.8-17
4.8.2.4.1 Geometric Design Hazards.....4.8-17
4.8.2.4.2 Freeway Safety Analysis.....4.8-17
4.8.3 Existing Conditions.....4.8-18
4.8.3.1 Regulatory Setting.....4.8-18
4.8.3.1.1 State.....4.8-18
4.8.3.1.2 Regional.....4.8-20
4.8.3.1.3 Local.....4.8-21
4.8.3.2 Environmental Setting.....4.8-23
4.8.3.2.1 Existing Facilities.....4.8-23
4.8.3.2.2 Existing VMT.....4.8-31
4.8.3.3 Projected Future Conditions Baseline (2028).....4.8-33
4.8.3.3.1 Key Components of Projected Future Conditions Baseline (2028).....4.8-33
4.8.3.3.2 Projected Future Conditions Baseline (2028) VMT.....4.8-36
4.8.4 Thresholds of Significance.....4.8-38
4.8.5 Project Impacts.....4.8-38
4.8.5.1 Impact 4.8-1.....4.8-41
4.8.5.1.1 Project Impacts.....4.8-41
4.8.5.1.2 Mitigation Measures.....4.8-51
4.8.5.1.3 Significance of Impact After Mitigation.....4.8-51
4.8.5.2 Impact 4.8-2.....4.8-51
4.8.5.2.1 Project Impacts.....4.8-51
4.8.5.2.2 Mitigation Measures.....4.8-52
4.8.5.2.3 Significance of Impact After Mitigation.....4.8-57
4.8.5.3 Impact 4.8-3.....4.8-57
4.8.5.3.1 Project Impacts.....4.8-57
4.8.5.3.2 Mitigation Measures.....4.8-57
4.8.5.3.3 Significance of Impact After Mitigation.....4.8-57
4.8.5.4 Impact 4.8-4.....4.8-58
4.8.5.4.1 Project Impacts.....4.8-58
4.8.5.4.2 Mitigation Measures.....4.8-59
4.8.5.4.3 Significance of Impact After Mitigation.....4.8-59
4.8.5.5 Impact 4.8-5.....4.8-59
4.8.5.5.1 Project Impacts.....4.8-59
4.8.5.5.2 Mitigation Measures.....4.8-60
4.8.5.5.3 Significance of Impact After Mitigation.....4.8-60
4.8.6 Cumulative Impacts.....4.8-61
4.8.6.1 Cumulative Impacts Associated with Plans, Programs, Ordinances, and Policies.....4.8-61
4.8.6.1.1 RTP/SCS.....4.8-61
4.8.6.1.2 Mobility Plan 2035.....4.8-62
4.8.6.1.3 Century Boulevard Streetscape Plan.....4.8-62
4.8.6.2 Cumulative Impacts Associated with VMT.....4.8-63
4.8.6.3 Cumulative Impacts Associated with Hazards.....4.8-64
4.8.7 Summary of Impact Determinations.....4.8-64

4.9 Utilities 4.9.1-1

4.9.1 Water Supply 4.9.1-1

4.9.1.1 Introduction 4.9.1-1
4.9.1.2 Methodology 4.9.1-1
4.9.1.3 Existing Conditions 4.9.1-1
4.9.1.3.1 Regulatory Setting 4.9.1-1
4.9.1.3.1.1 State 4.9.1-1
4.9.1.3.1.2 Local 4.9.1-3
4.9.1.3.2 Environmental Setting 4.9.1-5
4.9.1.4 Thresholds of Significance 4.9.1-7
4.9.1.5 Project Impacts 4.9.1-7
4.9.1.5.1 Impact 4.9.1-1 ..... 4.9.1-7
4.9.1.5.1.1 Construction 4.9.1-7
4.9.1.5.1.2 Operations 4.9.1-8
4.9.1.5.1.3 Mitigation Measures 4.9.1-8
4.9.1.5.1.4 Significance of Impact After Mitigation 4.9.1-8
4.9.1.5.2 Impact 4.9.1-2 ..... 4.9.1-8
4.9.1.5.2.1 Construction 4.9.1-8
4.9.1.5.2.2 Operations 4.9.1-9
4.9.1.5.2.3 Mitigation Measures 4.9.1-12
4.9.1.5.2.4 Significance of Impact After Mitigation 4.9.1-12
4.9.1.6 Cumulative Impacts 4.9.1-12
4.9.1.7 Summary of Impact Determinations 4.9.1-13

4.9.2 Wastewater Generation 4.9.2-1

4.9.2.1 Introduction 4.9.2-1
4.9.2.2 Methodology 4.9.2-1
4.9.2.3 Existing Conditions 4.9.2-1
4.9.2.3.1 Regulatory Setting 4.9.2-1
4.9.2.3.1.1 State 4.9.2-1
4.9.2.3.1.2 Local 4.9.2-2
4.9.2.3.2 Environmental Setting 4.9.2-2
4.9.2.4 Thresholds of Significance 4.9.2-3
4.9.2.5 Project Impacts 4.9.2-3
4.9.2.5.1 Impact 4.9.2-1 ..... 4.9.2-3
4.9.2.5.1.1 Construction 4.9.2-3
4.9.2.5.1.2 Operations 4.9.2-4
4.9.2.5.1.3 Mitigation Measures 4.9.2-5
4.9.2.5.1.4 Significance of Impact After Mitigation 4.9.2-5
4.9.2.5.2 Impact 4.9.2-2 ..... 4.9.2-5
4.9.2.5.2.1 Construction 4.9.2-5
4.9.2.5.2.2 Operations 4.9.2-5
4.9.2.5.2.3 Mitigation Measures 4.9.2-5
4.9.2.5.2.4 Significance of Impact After Mitigation 4.9.2-5
4.9.2.6 Cumulative Impacts 4.9.2-6
4.9.2.7 Summary of Impact Determinations 4.9.2-7

5. Alternatives 5-1
5.1 Introduction 5-1
5.2 Significant Impacts of the Proposed Project 5-2
5.3 Project Objectives 5-4
5.4 Alternatives 5-6
5.4.1 Alternatives Considered but Rejected 5-6
5.4.1.1 Alternative Locations 5-7
5.4.1.2 West Terminal Alternative 5-7
5.4.1.3 Alternative Construction Approach Alternative 5-10
5.4.1.4 Airfield Improvements Only 5-11
5.4.2 Alternatives Carried Forward for Further Consideration 5-11
5.4.2.1 Alternative 1: No Project Alternative 5-12
5.4.2.1.1 Airfield Facilities 5-12
5.4.2.1.2 Terminal Facilities 5-12
5.4.2.1.3 Landside Facilities 5-15
5.4.2.1.4 Miscellaneous Facilities 5-16
5.4.2.2 Alternative 2: Concourse 0 Only Alternative 5-17
5.4.2.2.1 Airfield Improvements 5-18
5.4.2.2.2 Terminal Improvements 5-18
5.4.2.2.3 Landside Improvements 5-18
5.4.2.2.4 Enabling Projects 5-18
5.4.2.3 Alternative 3: Terminal 9 Only Alternative 5-21
5.4.2.3.1 Airfield Improvements 5-21
5.4.2.3.2 Terminal Improvements 5-22
5.4.2.3.3 Landside Improvements 5-22
5.4.2.3.4 Enabling Projects 5-22
5.4.2.4 Alternative 4: Approved LAMP Roadway Improvements plus Terminal 9 Access Alternative 5-22
5.4.2.4.1 Airfield Improvements 5-25
5.4.2.4.2 Terminal Improvements 5-25
5.4.2.4.3 Landside Improvements 5-26
5.4.2.4.4 Enabling Projects 5-26
5.5 Evaluation of Alternatives 5-26
5.5.1 Alternative 1: No Project Alternative 5-26
5.5.1.1 Air Quality and Human Health Risk 5-26
5.5.1.1.1 Air Quality 5-26
5.5.1.1.1.1 Construction 5-26
5.5.1.1.1.2 Operations 5-29
5.5.1.1.1.3 Cumulative 5-31
5.5.1.1.2 Human Health Risk 5-32
5.5.1.1.2.1 Construction 5-32
5.5.1.1.2.2 Operations 5-32
5.5.1.1.2.3 Cumulative 5-32
5.5.1.2 Cultural Resources (Historical Resources) 5-33
5.5.1.2.1 Construction 5-33
5.5.1.2.2 Operations 5-33
5.5.1.2.3 Cumulative 5-34

5.5.1.3 Energy 5-35
5.5.1.3.1 Construction 5-35
5.5.1.3.2 Operations 5-35
5.5.1.3.3 Cumulative 5-36
5.5.1.4 Greenhouse Gas Emissions 5-36
5.5.1.4.1 Construction and Operations 5-36
5.5.1.4.2 Cumulative 5-37
5.5.1.5 Hazardous Materials 5-37
5.5.1.5.1 Construction 5-37
5.5.1.5.2 Operations 5-38
5.5.1.5.3 Cumulative 5-38
5.5.1.6 Land Use and Planning 5-39
5.5.1.6.1 Construction and Operations 5-39
5.5.1.6.2 Cumulative 5-39
5.5.1.7 Noise 5-40
5.5.1.7.1 Aircraft Noise 5-40
5.5.1.7.1.1 Construction 5-40
5.5.1.7.1.2 Operations 5-40
5.5.1.7.1.3 Cumulative 5-41
5.5.1.7.2 Roadway Traffic Noise 5-41
5.5.1.7.2.1 Operations 5-41
5.5.1.7.2.2 Cumulative 5-41
5.5.1.7.3 Construction Traffic and Equipment Noise and Vibration 5-42
5.5.1.7.3.1 Construction 5-42
5.5.1.7.3.2 Cumulative 5-45
5.5.1.8 Transportation 5-47
5.5.1.8.1 Plans, Programs, Ordinances, and Policies Analysis 5-47
5.5.1.8.2 VMT Analysis 5-47
5.5.1.8.3 Hazard Analysis 5-48
5.5.1.8.4 Cumulative Impacts 5-49
5.5.1.9 Utilities 5-50
5.5.1.9.1 Water Supply 5-50
5.5.1.9.1.1 Construction 5-50
5.5.1.9.1.2 Operations 5-50
5.5.1.9.1.3 Cumulative 5-50
5.5.1.9.2 Wastewater Generation 5-51
5.5.1.9.2.1 Construction 5-51
5.5.1.9.2.2 Operations 5-51
5.5.1.9.2.3 Cumulative 5-52
5.5.2 Alternative 2: Concourse 0 Only 5-52
5.5.2.1 Air Quality and Human Health Risk 5-52
5.5.2.1.1 Air Quality 5-52
5.5.2.1.1.1 Construction 5-52
5.5.2.1.1.2 Operations 5-53
5.5.2.1.1.3 Cumulative 5-54

5.5.2.1.2 Human Health Risk 5-54
5.5.2.1.2.1 Construction 5-54
5.5.2.1.2.2 Operations 5-54
5.5.2.1.2.3 Cumulative 5-55
5.5.2.2 Cultural Resources (Historical Resources) 5-55
5.5.2.2.1 Construction 5-55
5.5.2.2.2 Operations 5-55
5.5.2.2.3 Cumulative 5-55
5.5.2.3 Energy 5-56
5.5.2.3.1 Construction 5-56
5.5.2.3.2 Operations 5-56
5.5.2.3.3 Cumulative 5-56
5.5.2.4 Greenhouse Gas Emissions 5-56
5.5.2.4.1 Construction and Operations 5-56
5.5.2.4.2 Cumulative 5-57
5.5.2.5 Hazardous Materials 5-57
5.5.2.5.1 Construction 5-57
5.5.2.5.2 Operations 5-57
5.5.2.5.3 Cumulative 5-57
5.5.2.6 Land Use and Planning 5-58
5.5.2.6.1 Construction and Operations 5-58
5.5.2.6.2 Cumulative 5-58
5.5.2.7 Noise 5-58
5.5.2.7.1 Aircraft Noise 5-58
5.5.2.7.1.1 Construction 5-58
5.5.2.7.1.2 Operations 5-58
5.5.2.7.1.3 Cumulative 5-59
5.5.2.7.2 Roadway Traffic Noise 5-59
5.5.2.7.2.1 Operations 5-59
5.5.2.7.2.2 Cumulative 5-59
5.5.2.7.3 Construction Traffic and Equipment Noise and Vibration 5-59
5.5.2.7.3.1 Construction 5-59
5.5.2.7.3.2 Cumulative 5-60
5.5.2.8 Transportation 5-63
5.5.2.8.1 Plans, Programs, Ordinances, and Policies Analysis 5-63
5.5.2.8.2 VMT Analysis 5-63
5.5.2.8.3 Hazard Analysis 5-64
5.5.2.8.4 Cumulative Impacts 5-64
5.5.2.9 Utilities 5-65
5.5.2.9.1 Water Supply 5-65
5.5.2.9.1.1 Construction 5-65
5.5.2.9.1.2 Operations 5-66
5.5.2.9.1.3 Cumulative 5-66
5.5.2.9.2 Wastewater Generation 5-66
5.5.2.9.2.1 Construction 5-66
5.5.2.9.2.2 Operations 5-66

5.5.2.9.2.3 Cumulative 5-66
5.5.3 Alternative 3: Terminal 9 Only 5-67
5.5.3.1 Air Quality and Human Health Risk 5-67
5.5.3.1.1 Air Quality 5-67
5.5.3.1.1.1 Construction 5-67
5.5.3.1.1.2 Operations 5-67
5.5.3.1.1.3 Cumulative 5-69
5.5.3.1.2 Human Health Risk 5-69
5.5.3.1.2.1 Construction 5-69
5.5.3.1.2.2 Operations 5-69
5.5.3.1.2.3 Cumulative 5-69
5.5.3.2 Cultural Resources (Historical Resources) 5-69
5.5.3.2.1 Construction 5-69
5.5.3.2.2 Operations 5-70
5.5.3.2.3 Cumulative 5-70
5.5.3.3 Energy 5-70
5.5.3.3.1 Construction 5-70
5.5.3.3.2 Operations 5-70
5.5.3.3.3 Cumulative 5-71
5.5.3.4 Greenhouse Gas Emissions 5-71
5.5.3.4.1 Construction and Operations 5-71
5.5.3.4.2 Cumulative 5-71
5.5.3.5 Hazardous Materials 5-71
5.5.3.5.1 Construction 5-71
5.5.3.5.2 Operations 5-72
5.5.3.5.3 Cumulative 5-72
5.5.3.6 Land Use and Planning 5-72
5.5.3.6.1 Construction and Operations 5-72
5.5.3.6.2 Cumulative 5-72
5.5.3.7 Noise 5-73
5.5.3.7.1 Aircraft Noise 5-73
5.5.3.7.1.1 Construction 5-73
5.5.3.7.1.2 Operations 5-73
5.5.3.7.1.3 Cumulative 5-73
5.5.3.7.2 Roadway Traffic Noise 5-73
5.5.3.7.2.1 Operations 5-73
5.5.3.7.2.2 Cumulative 5-73
5.5.3.7.3 Construction Traffic and Equipment Noise and Vibration 5-74
5.5.3.7.3.1 Construction 5-74
5.5.3.7.3.2 Cumulative 5-74
5.5.3.8 Transportation 5-77
5.5.3.8.1 Plans, Programs, Ordinances, and Policies Analysis 5-77
5.5.3.8.2 VMT Analysis 5-77
5.5.3.8.3 Hazard Analysis 5-78
5.5.3.8.4 Cumulative Impacts 5-78
5.5.3.9 Utilities 5-79

5.5.3.9.1 Water Supply 5-79
5.5.3.9.1.1 Construction 5-79
5.5.3.9.1.2 Operations 5-79
5.5.3.9.1.3 Cumulative 5-79
5.5.3.9.2 Wastewater Generation 5-80
5.5.3.9.2.1 Construction 5-80
5.5.3.9.2.2 Operations 5-80
5.5.3.9.2.3 Cumulative 5-80
5.5.4 Alternative 4: Approved LAMP Roadway Improvements plus Terminal 9 Access 5-80
5.5.4.1 Air Quality and Human Health Risk 5-80
5.5.4.1.1 Air Quality 5-80
5.5.4.1.1.1 Construction 5-80
5.5.4.1.1.2 Operations 5-81
5.5.4.1.1.3 Cumulative 5-82
5.5.4.1.2 Human Health Risk 5-82
5.5.4.1.2.1 Construction 5-82
5.5.4.1.2.2 Operations 5-82
5.5.4.1.2.3 Cumulative 5-83
5.5.4.2 Cultural Resources (Historical Resources) 5-83
5.5.4.2.1 Construction 5-83
5.5.4.2.2 Operations 5-83
5.5.4.2.3 Cumulative 5-83
5.5.4.3 Energy 5-84
5.5.4.3.1 Construction 5-84
5.5.4.3.2 Operations 5-84
5.5.4.3.3 Cumulative 5-84
5.5.4.4 Greenhouse Gas Emissions 5-84
5.5.4.4.1 Construction and Operations 5-84
5.5.4.4.2 Cumulative 5-85
5.5.4.5 Hazardous Materials 5-85
5.5.4.5.1 Construction 5-85
5.5.4.5.2 Operations 5-85
5.5.4.5.3 Cumulative 5-85
5.5.4.6 Land Use and Planning 5-86
5.5.4.6.1 Construction and Operations 5-86
5.5.4.6.2 Cumulative 5-86
5.5.4.7 Noise 5-86
5.5.4.7.1 Aircraft Noise 5-86
5.5.4.7.1.1 Construction 5-86
5.5.4.7.1.2 Operations 5-86
5.5.4.7.1.3 Cumulative 5-87
5.5.4.7.2 Roadway Traffic Noise 5-87
5.5.4.7.2.1 Operations 5-87
5.5.4.7.2.2 Cumulative 5-87
5.5.4.7.3 Construction Traffic and Equipment Noise and Vibration 5-87
5.5.4.7.3.1 Construction 5-87

5.5.4.7.3.2 Cumulative 5-88
5.5.4.8 Transportation 5-92
5.5.4.8.1 Plans, Programs, Ordinances, and Policies Analysis 5-92
5.5.4.8.2 VMT Analysis 5-92
5.5.4.8.3 Hazard Analysis 5-93
5.5.4.8.4 Cumulative Impacts 5-94
5.5.4.9 Utilities 5-94
5.5.4.9.1 Water Supply 5-94
5.5.4.9.1.1 Construction 5-94
5.5.4.9.1.2 Operations 5-94
5.5.4.9.1.3 Cumulative 5-95
5.5.4.9.2 Wastewater Generation 5-95
5.5.4.9.2.1 Construction 5-95
5.5.4.9.2.2 Operations 5-95
5.5.4.9.2.3 Cumulative 5-95
5.6 Environmentally Superior Alternative 5-95
5.6.1 Alternative 1 – No Project 5-96
5.6.2 Alternative 2 – Concourse 0 Only 5-96
5.6.3 Alternative 3 – Terminal 9 Only 5-100
5.6.4 Alternative 4 - Approved LAMP Roadway Improvements plus Termina 9 Access 5-101
5.6.5 Environmentally Superior Alternative 5-102

6. Other Environmental Considerations 6-1
6.1 Significant Unavoidable Impacts 6-1
6.2 Significant Irreversible Environmental Changes 6-2
6.3 Growth Inducing Impacts 6-3
6.3.1 Population, Housing, and Employment Growth 6-3
6.3.2 Growth in LAX Passenger Activity Levels 6-4
6.3.3 Economic Growth 6-6
6.4 Less Than Significant Effects 6-7

7. List of Preparers, Organizations and Persons Consulted, List of Acronyms, and List of References 7-1
7.1 List of Preparers 7-1
7.2 Organizations and Persons Consulted 7-4
7.3 List of Acronyms 7-5
7.4 List of References 7-16

List of Tables

Table 1-1 West Remote Gates and Passenger Gates with Implementation of Concourse 0 and Terminal 9 1-10
Table 1-2 Summary of Potential Impacts and Mitigation Measures Associated with the Proposed Project 1-14
Table 1-3 Summary Comparison of Impacts Associated with the Proposed Project and Alternatives 1-29
Table 2-1 SCAG Regional Airport Passenger Forecast for 2020-2045 RTP/SCS 2-16

Table 2-2	West Remote Gates and Passenger Gates with Implementation of Concourse 0 and Terminal 9	2-38
Table 2-3	Proposed Project Sustainability Features	2-60
Table 2-4	Description of Enabling Projects, Facilities, and/or Activities	2-63
Table 2-5	Properties to be Acquired	2-76
Table 2-6	Property Acquisition and/or Easements Related to Roadway Improvements	2-77
Table 3-1	Projects At/Adjacent to LAX	3-6
Table 4.1.1-1	National and California Ambient Air Quality Standards (NAAQS and CAAQS)	4.1.1-21
Table 4.1.1-2	South Coast Air Basin Attainment Status	4.1.1-22
Table 4.1.1-3	Ambient Air Quality Data	4.1.1-29
Table 4.1.1-4	SCAQMD CEQA Significance Thresholds for Air Pollutant Emissions in the South Coast Air Basin	4.1.1-31
Table 4.1.1-5	SCAQMD CEQA Significance Thresholds for Air Pollutant Concentrations in the South Coast Air Basin	4.1.1-32
Table 4.1.1-6	Peak Daily Criteria Pollutant Emissions from Project Construction Activities	4.1.1-38
Table 4.1.1-7	Aircraft Taxi/Idle Criteria Pollutant Emissions from Temporary Runway Closures	4.1.1-40
Table 4.1.1-8	Total Direct and Indirect Construction-Related Criteria Pollutant Emissions	4.1.1-40
Table 4.1.1-9	Photochemical Modeling Pollutant Emissions	4.1.1-41
Table 4.1.1-10	Operational Emissions – 2028 With Project Compared to 2018 Baseline	4.1.1-45
Table 4.1.1-11	Operational Emissions – 2028 With Project Compared to 2028 Without Project	4.1.1-46
Table 4.1.1-12	Photochemical Modeling Pollutant Emissions	4.1.1-48
Table 4.1.1-13	Project Peak Construction Concentrations ($\mu g/m^3$)	4.1.1-51
Table 4.1.1-14	Operational Concentrations – 2028 With Project Compared to 2018 Baseline	4.1.1-52
Table 4.1.1-15	Operational Concentrations – 2028 Without Project Compared to 2018 Baseline Conditions	4.1.1-56
Table 4.1.1-16	Operational Concentration Comparison – 2028 With Project Compared to 2028 Without Project	4.1.1-56
Table 4.1.1-17	Cumulative Construction Projects Peak Quarter Emissions Estimates (tons/quarter)	4.1.1-59
Table 4.1.1-18	Summary of Impacts and Mitigation Measures Associated with the Proposed Project Related to Air Quality	4.1.1-61
Table 4.1.2-1	Toxic Air Contaminants (TAC) of Concern for the Proposed Project	4.1.2-4
Table 4.1.2-2	Incremental Cancer Risks for Maximally Exposed Individuals during Combined With Project Construction and Operational Periods	4.1.2-14
Table 4.1.2-3	Incremental Cancer Risks for Maximally Exposed Individuals during the With Project Operational Period Compared to 2018 Baseline	4.1.2-17
Table 4.1.2-4	Incremental Cancer Risks for Maximally Exposed Individuals for 2028 With Project Operations Compared to 2018 Baseline and 2028 Without Project Compared to 2018 Baseline	4.1.2-19
Table 4.1.2-5	Incremental Chronic Non-Cancer Human Health Hazards for Maximally Exposed Individuals during Peak With Project Construction and 2028 With Project Operations Compared to 2018 Baseline	4.1.2-22
Table 4.1.2-6	Incremental Chronic Non-Cancer Human Health Hazards for Maximally Exposed Individuals for 2028 With Project Operations Compared to 2018 Baseline and 2028 Without Project Compared to 2018 Baseline	4.1.2-26

Table 4.1.2-7 Peak Construction-Related Incremental Acute (1-Hour) Non-Cancer Health Hazards for With Project 4.1.2-28
Table 4.1.2-8 Operation-Related Incremental Acute (1-Hour) Non-Cancer Health Hazards for 2028 With Project Compared to 2018 Baseline 4.1.2-30
Table 4.1.2-9 Operation-Related Incremental Acute (1-Hour) Non-Cancer Health Hazards for 2028 With Project Compared to 2018 Baseline and 2028 Without Project Compared to 2018 Baseline 4.1.2-32
Table 4.1.2-10 Comparison of Peak On-Airport Worker TAC Concentrations During With Project Construction Against Cal/OSHA PEL 4.1.2-34
Table 4.1.2-11 Comparison of Peak On-Airport Worker TAC Concentrations During With Project Operations Against Cal/OSHA PEL 4.1.2-36
Table 4.1.2-12 Summary of Impacts and Mitigation Measures Associated with the Proposed Project Related to Human Health Risk 4.1.2-42
Table 4.2-1 Summary of Historical Resources 4.2-11
Table 4.2-2 Summary of Impacts and Mitigation Measures Associated with the Proposed Project Related to Cultural Resources (Historical Resources) 4.2-17
Table 4.3-1 Existing Fuel Consumption and Energy Use (2018) 4.3-11
Table 4.3-2 Construction Period Fuel Consumption and Energy Use 4.3-13
Table 4.3-3 Operational Electricity Consumption and Energy Use for Concourse 0 and Terminal 9 ..... 4.3-15
Table 4.3-4 Electricity Consumption Associated with Operational Water Supply and Wastewater Treatment 4.3-16
Table 4.3-5 Operational Natural Gas Consumption and Energy Use for Concourse 0 and Terminal 9 ..... 4.3-17
Table 4.3-6 Operational Vehicle and Transportation-Related Fuel Consumption and Energy Use 4.3-18
Table 4.3-7 Summary of Impacts and Mitigation Measures Associated with the Proposed Project Related to Energy 4.3-22
Table 4.4-1 California Statewide GHG Emissions (1990 and 2017) 4.4-24
Table 4.4-2 2018 Existing Airport Operational GHG Emissions 4.4-25
Table 4.4-3 Construction-Related GHG Emissions for the Proposed Project 4.4-28
Table 4.4-4 Aircraft Taxi-Idle GHG Emissions with Temporary Runway Closure 4.4-28
Table 4.4-5 Construction (Amortized) and Operational GHG Emissions for the Proposed Project as Compared to 2018 Baseline Conditions 4.4-29
Table 4.4-6 Construction (Amortized) and Operational GHG Emissions for the Proposed Project as Compared to Future Without the Project 4.4-30
Table 4.4-7 Proposed Project Consistency with Plans, Policies, and Regulations Adopted to Reduce Greenhouse Gas Emissions 4.4-34
Table 4.4-8 Summary of Impacts and Mitigation Measures Associated with the Proposed Project Related to Greenhouse Gas Emissions 4.4-40
Table 4.5-1 Sites with Planned or Ongoing Remediation in the Vicinity of Project Components 4.5-10
Table 4.5-2 Summary of Impacts and Mitigation Measures Associated with the Proposed Project Related to Hazardous Materials 4.5-21
Table 4.6-1 Project Consistency with Applicable Goals in the 2020–2045 Regional Transportation Plan/Sustainable Communities Strategy (Connect SoCal) 4.6-23
Table 4.6-2 Project Consistency with Applicable Policies in the General Plan Framework Element 4.6-25
Table 4.6-3 Project Consistency with Applicable Policies in the Mobility Plan 2035 ..... 4.6-26

Table 4.6-4 Project Consistency with Applicable Policies in the General Plan Noise Element....4.6-28
Table 4.6-5 Project Consistency with Applicable Policies in the LAX Plan....4.6-30
Table 4.6-6 Project Consistency with Applicable Policies in the Century Boulevard Streetscape Plan....4.6-35
Table 4.6-7 Summary of Impacts and Mitigation Measures Associated with the Proposed Project Related to Land Use and Planning....4.6-36
Table 4.7.1-1 Common Sounds on the A-Weighted Decibel Scale....4.7.1-2
Table 4.7.1-2 Federal Aviation Regulation Part 150 Land Use Guidelines....4.7.1-19
Table 4.7.1-3 Los Angeles County Airport Land Use Plan: Land Use Compatibility Table....4.7.1-23
Table 4.7.1-4 City of Los Angeles Guidelines for Noise Compatible Land Uses....4.7.1-24
Table 4.7.1-5 Estimated Population, Housing Units, and Acreage within the Aircraft Noise Contours under Existing Baseline Conditions....4.7.1-28
Table 4.7.1-6 Other Noise-Sensitive Uses within the Aircraft Noise Contours under Existing Baseline Conditions....4.7.1-28
Table 4.7.1-7 School Exposure to Aircraft Noise under Existing Baseline Conditions....4.7.1-29
Table 4.7.1-8 Schools Exposed to Noise Above Interior dBA Speech Interference Levels During the Average School Day under Existing Baseline Conditions....4.7.1-29
Table 4.7.1-9 Schools Exposed to Exceedances of ANSI Steady-State Noise Level During the Average School Day under Existing Baseline Conditions....4.7.1-30
Table 4.7.1-10 Average Annual Daily Aircraft Operations at LAX....4.7.1-32
Table 4.7.1-11 Estimated Population, Housing Units, and Acreage within the Aircraft Noise Contours under Existing Baseline and Future Conditions....4.7.1-35
Table 4.7.1-12 Other Noise-Sensitive Uses within the Aircraft Noise Contours under Existing Baseline (2018) and Future (2028) Conditions....4.7.1-36
Table 4.7.1-13 School Exposure to Aircraft Noise - Proposed Project Compared to Existing Baseline Conditions....4.7.1-45
Table 4.7.1-14 Schools Exposed to Noise Above Interior dBA Speech Interference Levels During the Average School Day – Proposed Project Compared to Existing Baseline Conditions....4.7.1-46
Table 4.7.1-15 Schools Exposed to Exceedances of ANSI Steady-State Noise Level During the Average School Day – Proposed Project Compared to Existing Baseline Conditions....4.7.1-47
Table 4.7.1-16 Summary of Impacts and Mitigation Measures Associated with the Proposed Project Related to Aircraft Noise....4.7.1-49
Table 4.7.2-1 Noise-Sensitive Receptors in Vicinity of the Project Area....4.7.2-4
Table 4.7.2-2 City of Los Angeles Guidelines for Noise Compatible Land Uses....4.7.2-7
Table 4.7.2-3 Change in Average Daily Traffic CNEL Compared to Existing Conditions....4.7.2-8
Table 4.7.2-4 Change in Peak Hour Traffic L_{eq} Compared to Existing Conditions (dBA)....4.7.2-9
Table 4.7.2-5 Computed Noise Levels for Future Traffic Noise and Aircraft Noise Combined....4.7.2-12
Table 4.7.2-6 Summary of Impacts and Mitigation Measures Associated with the Proposed Project Related to Roadway Traffic Noise....4.7.2-14
Table 4.7.3-1 Existing Conditions at Construction Noise-Sensitive Receptors....4.7.3-5
Table 4.7.3-2 FTA Construction Vibration Damage Criteria....4.7.3-7
Table 4.7.3-3 Buildings in Proximity to Construction Activity....4.7.3-9
Table 4.7.3-4 Existing Traffic Volumes on Proposed Haul Routes....4.7.3-11
Table 4.7.3-5 Construction Noise Levels at Noise-Sensitive Receptor Sites....4.7.3-13
Table 4.7.3-6 Staging Area Noise Levels at Noise-Sensitive Receptor Sites....4.7.3-19

Table 4.7.3-7	Vibration Source Levels for Construction Equipment	4.7.3-23
Table 4.7.3-8	Cumulative Construction Equipment Noise Impacts	4.7.3-26
Table 4.7.3-9	Summary of Impacts and Mitigation Measures Associated with the Proposed Project Related to Construction Noise	4.7.3-27
Table 4.8-1	Existing Daily Trip Generation	4.8-32
Table 4.8-2	Summary of Existing (2019) Passenger VMT	4.8-33
Table 4.8-3	Summary of Existing (2019) VMT per Employee	4.8-33
Table 4.8-4	Projected Future Conditions Baseline (2028) Daily Trip Generation	4.8-37
Table 4.8-5	Summary of Projected Future Conditions Baseline (2028) Passenger VMT	4.8-37
Table 4.8-6	Summary of Projected Future Conditions Baseline (2028) VMT per Employee	4.8-37
Table 4.8-7	Concourse 0 and Terminal 9 Employee Trip Generation Summary	4.8-39
Table 4.8-8	Total LAX Daily Trip Generation with the Project	4.8-40
Table 4.8-9	Total Airport Daily Trip Generation for Existing Conditions, Projected Future Conditions Baseline (2028), Proposed Project (2028)	4.8-40
Table 4.8-10	Summary of Projected VMT for Existing Conditions, Projected Future Conditions Baseline (2028), and Proposed Project (2028)	4.8-41
Table 4.8-11	Proposed Project's Consistency with Applicable City and Regional Plans, Programs, Ordinances, or Policies	4.8-42
Table 4.8-12	Guiding Questions to Address Proposed Project's Consistency with Transportation-Related City Plans, Programs, Ordinances, and Policies	4.8-45
Table 4.8-13	Summary of Projected VMT for Existing Conditions, Projected Future Conditions Baseline (2028), and Proposed Project (2028)	4.8-51
Table 4.8-14	Summary of Projected VMT for Existing Conditions, Projected Future Conditions Baseline (2028), and Proposed Project (2028)	4.8-58
Table 4.8-15	Summary of Freeway Ramp Queueing Analysis for Existing Conditions, Projected Future Conditions Baseline (2028), and Proposed Project (2028)	4.8-60
Table 4.8-16	Summary of Impacts and Mitigation Measures Associated with the Proposed Project Related to Transportation	4.8-65
Table 4.9.1-1	Proposed Project Water Usage	4.9.1-9
Table 4.9.1-2	Summary of Impacts and Mitigation Measures Associated with the Proposed Project Related to Water Supply	4.9.1-14
Table 4.9.2-1	Summary of Impacts and Mitigation Measures Associated with the Proposed Project Related to Wastewater Generation	4.9.2-7
Table 5-1	Summary of Impacts - Proposed Project	5-2
Table 5-2	Alternative Construction Approach (Reduce Daily Activity Duration) Air Pollutant Emissions	5-10
Table 5-3	Summary of Alterations to the Surroundings of Historical Resources	5-34
Table 5-4	Relationship of Proposed Project and Alternatives to Ongoing or Potential Future Remediation Activities	5-38
Table 5-5	Comparison of Construction Noise Impacts Associated with the Proposed Project and Alternatives	5-43
Table 5-6	Construction Noise Levels at Noise-Sensitive Receptor Sites - Alternative 1	5-46
Table 5-7	Alternative 1 Passenger VMT	5-47
Table 5-8	Total Taxi Idle Times - Proposed Project Compared to Alternative 2	5-54
Table 5-9	Construction Noise Levels at Noise-Sensitive Receptor Sites - Alternative 2	5-61
Table 5-10	Total Taxi Idle Times - Proposed Project Compared to Alternative 3	5-68
Table 5-11	Construction Noise Levels at Noise-Sensitive Receptor Sites - Alternative 3	5-75
Table 5-12	Alternative 3 Passenger and Employee VMT	5-77

Table 5-13 Construction Noise Levels at Noise-Sensitive Receptor Sites - Alternative 4 5-89
Table 5-14 Alternative 4 Passenger and Employee VMT 5-92
Table 5-15 Summary Comparison of Impacts Associated with the Proposed Project and Alternatives 5-97

List of Figures

Figure 1-1 Regional Location 1-2
Figure 1-2 Project Location 1-3
Figure 1-3 LAX Airfield and Terminal Modernization Project Elements 1-7
Figure 2-1 LAX Airfield and Terminal Modernization Project Overview 2-2
Figure 2-2 Regional Location 2-3
Figure 2-3 Project Location 2-5
Figure 2-4 LAX Airfield and Terminal Modernization Project Elements 2-7
Figure 2-5 Taxiway D Extension West 2-11
Figure 2-6 Runway 6L-24R Exits 2-13
Figure 2-7 LAX Airfield and Terminal Modernization Project Landside Element Details 2-21
Figure 2-8 Concourse 0 Conceptual Site Plan 2-25
Figure 2-9 Concourse 0 Conceptual View - Landside 2-29
Figure 2-10 Concourse 0 Conceptual View - Airside 2-30
Figure 2-11 Concourse 0 Passenger Flows - Departures and Domestic Arrivals 2-31
Figure 2-12 Concourse 0 Passenger Flows - International Arrivals 2-32
Figure 2-13 Terminal 9 - Conceptual Site Plan 2-33
Figure 2-14 Terminal 9 Conceptual View - Landside 2-35
Figure 2-15 Terminal 9 Conceptual View - Airside 2-36
Figure 2-16 Terminal 9 Passenger Flows 2-37
Figure 2-17 Landside Improvements - Conceptual Plan and Runway Protection Zone 2-41
Figure 2-18 Access to and from the Central Terminal Area with Proposed Landside Improvements 2-43
Figure 2-19 Access to and from Terminal 9 with Proposed Landside Improvements 2-45
Figure 2-20 View Looking North along Sepulveda Boulevard 2-47
Figure 2-21 View Looking Northwest across Western Portion of Terminal 9 (Foreground) and Concourse 0 (Background) 2-49
Figure 2-22 View Looking South along Sepulveda Boulevard 2-51
Figure 2-23 View Looking South with Roadway Improvements in Foreground and Terminal 9 in Background 2-53
Figure 2-24 Part 77 Imaginary Surfaces 2-55
Figure 2-25 Reclaimed Water Pipeline Extension 2-57
Figure 2-26a Enabling Projects for Airfield Improvements 2-69
Figure 2-26b Enabling Projects for Concourse 0, Terminal 9, and Landside Improvements 2-71
Figure 2-27 Enabling Project Relocation - Southwest Airlines GSE Facility Potential Relocation Sites 2-73
Figure 2-28 Construction Phasing 2-79
Figure 2-29 Construction Staging Areas and Haul Routes 2-81
Figure 2-30 Interim Access Ramps to Terminal 9 2-84
Figure 3-1 Projects At/Adjacent to LAX 3-9

Figure 4.1.1-1 Engine Certification NO_x Emission Indices as a Percent of ICAO CAEP/8 Standard 4.1.1-12
Figure 4.1.1-2 Locations of 2028 With Project Incremental 24-Hour Concentrations Above SCAQMD CEQA Significance Threshold 4.1.1-54
Figure 4.1.1-3 Locations of 2028 With Project Incremental Annual Concentrations Above SCAQMD CEQA Significance Threshold 4.1.1-55
Figure 4.1.2-1 Construction and Operations Grid Point Locations 4.1.2-7
Figure 4.1.2-2 Peak Incremental Cancer Risk Locations – Construction 4.1.2-15
Figure 4.1.2-3 Peak Incremental Cancer Risk Locations – Operations (2028 With Project Compared to 2018 Baseline) 4.1.2-18
Figure 4.1.2-4 Peak Incremental Cancer Risk Locations – Operations (2028 Without Project Compared to 2018 Baseline) 4.1.2-20
Figure 4.1.2-5 Peak Incremental Non-Cancer Hazard Locations – Construction 4.1.2-23
Figure 4.1.2-6 Peak Incremental Non-Cancer Hazard Locations – Operations (2028 With Project Compared to 2018 Baseline) 4.1.2-25
Figure 4.1.2-7 Peak Incremental Non-Cancer Hazard Locations – Operations (2028 Without Project Compared to 2018 Baseline) 4.1.2-27
Figure 4.1.2-8 Peak Acute Non-Cancer Hazard Locations – Construction 4.1.2-29
Figure 4.1.2-9 Peak Acute Non-Cancer Hazard Locations – Operations (2028 With Project Compared to 2018 Baseline) 4.1.2-31
Figure 4.1.2-10 Peak Acute Non-Cancer Hazard Locations – Operations (2028 Without Project Compared to 2018 Baseline) 4.1.2-33
Figure 4.2-1 Eligible Historical Resources in the Vicinity of the Proposed Project 4.2-9
Figure 4.5-1 Known Hazardous Materials Sites of Concern 4.5-11
Figure 4.6-1 Communities and Jurisdictional Boundaries 4.6-2
Figure 4.6-2 Los Angeles County Airport Land Use Plan Airport Influence Area 4.6-6
Figure 4.6-3 LAX Plan Map (2017) 4.6-11
Figure 4.6-4 Westchester - Playa del Rey Community Plan Land Use Map 4.6-14
Figure 4.6-5 LAX Specific Plan Map (2017) 4.6-16
Figure 4.6-6 Existing Land Uses in the Study Area 4.6-19
Figure 4.7.1-1 Sound Exposure Level Concept 4.7.1-4
Figure 4.7.1-2 Causes and Prevalence of All Awakenings 4.7.1-8
Figure 4.7.1-3 FICAN Recommended Sleep Disturbance Curve 4.7.1-9
Figure 4.7.1-4 ANSI Equation 1 Showing Percent of Population Awakened as a Function of Indoor Sound Exposure Level 4.7.1-10
Figure 4.7.1-5 Percent of Population Highly Annoyed as a Function of DNL 4.7.1-15
Figure 4.7.1-6 Aircraft Noise Contours (65-75 CNEL): Baseline (2018) Conditions 4.7.1-27
Figure 4.7.1-7 Aircraft Noise Contours (65-75 CNEL): 2028 Proposed Project Compared to Baseline (2018) Conditions 4.7.1-33
Figure 4.7.1-8 1.5 dBA Increase within the 65 CNEL Contour: Proposed Project (2028) Compared to Baseline (2018) Conditions 4.7.1-34
Figure 4.7.1-9 Aircraft Noise Contours (65-75 CNEL): 2028 Without Project Compared to 2028 Proposed Project and Baseline (2018) Conditions 4.7.1-37
Figure 4.7.1-10 1.5 dBA Increase within the 65 CNEL Contour: 2028 Without Project Compared to 2028 Proposed Project and Baseline (2018) Conditions 4.7.1-38
Figure 4.7.2-1 Roadway Noise Analysis Receivers 4.7.2-3
Figure 4.7.3-1 Noise-Sensitive Receptors in the Vicinity of Construction Sites 4.7.3-4
Figure 4.7.3-2 Construction Staging Areas and Nearby Noise-Sensitive Receptors 4.7.3-18
Figure 4.8-1 Daily Distribution of LAX Employee Residences by Residential Zip Code 4.8-10

Figure 4.8-2 Daily Distribution of LAX Employee Trips Based on Big Data 4.8-12
Figure 4.8-3 Driveway Count Locations 4.8-13
Figure 4.8-4 Daily Distribution of LAX Passenger Trips Based on Big Data 4.8-15
Figure 4.8-5 Transportation Analysis Study Area and Existing Street System 4.8-24
Figure 4.8-6 Existing CTA Roadway System 4.8-26
Figure 4.8-7 Existing Bicycle Facilities 4.8-28
Figure 4.8-8 Existing Local Transit Connections to LAX and Metro LAX/Aviation Station 4.8-29
Figure 4.8-9 Existing Regional Transit Connections to LAX and Metro LAX/Aviation Station 4.8-30
Figure 4.8-10 LAX Landside Access Modernization Program Components and Phase 1 Roadways 4.8-34
Figure 5-1 West Terminal Alternative 5-8
Figure 5-2 Alternative 1: No Project Alternative 5-13
Figure 5-3 Alternative 2: Concourse 0 Only 5-19
Figure 5-4 Alternative 3: Terminal 9 Only 5-23
Figure 5-5 Alternative 4: Approved LAMP Roadway Improvements plus Terminal 9 Access 5-27

Appendices

Appendix A Notice of Preparation/Scoping
Appendix B Activity Forecasts and Operational Analyses
Appendix C Air Quality, Human Health Risk Assessment, Greenhouse Gas Emissions, and Energy
Appendix D Historic Resources Technical Report
Appendix E Hazardous Materials
Appendix F Noise
Appendix G Transportation
Appendix H Water Supply Assessment

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1. INTRODUCTION AND EXECUTIVE SUMMARY

This document is a Draft Environmental Impact Report (EIR) for the Airfield and Terminal Modernization Project ("the proposed Project") at Los Angeles International Airport (LAX). LAX is owned and operated by the City of Los Angeles, whose Board of Airport Commissioners oversees the policy, management, operation, and regulation of LAX. Los Angeles World Airports (LAWA) is a proprietary department of the City of Los Angeles charged with administering the day-to-day operations of LAX. This Draft EIR has been prepared by LAWA as the lead agency in conformance with the California Environmental Quality Act (CEQA - Public Resources Code Section 21000 et seq.) and the State CEQA Guidelines (California Code of Regulations Title 14, Section 15000 et seq.).

A Notice of Preparation and Initial Study, included as **Appendix A** of this Draft EIR, was circulated for public review from April 4, 2019 to May 6, 2019. The Initial Study identified the following resource areas for further evaluation in the EIR: air quality (including human health risk), cultural resources (historical resources), energy, greenhouse gas (GHG) emissions, hazardous materials, land use and planning, noise, transportation, and utilities. As a result, these resources are evaluated further in this Draft EIR.

LAWA determined, through the analysis in the Initial Study (see **Appendix A**), that the proposed Project would have no impact or less than significant impacts related to aesthetics, agriculture and forestry resources, biological resources, cultural resources (archaeological resources), geology and soils, hydrology and water quality, mineral resources, population and housing, public services, recreation, tribal cultural resources, and wildfire; therefore, these topics are not analyzed further in this Draft EIR. Federal, state, regional, and local agencies, as well as the public, were afforded the opportunity to comment on the findings of the Initial Study through the 30-day scoping period associated with circulation of the Notice of Preparation for this Draft EIR.

1.1 Summary of the Proposed Project

1.1.1 Project Overview

LAWA proposes to implement airfield, terminal, and landside roadway improvements at LAX as part of LAWA's continuing commitment to maintain LAX as a world-class airport. The proposed Project consists of several primary elements, including airfield improvements that would enhance operational management and safety within the north airfield, new terminal facilities to upgrade passenger processing capabilities and enhance the passenger experience, and an improved system of roadways to better access the Central Terminal Area (CTA) and new facilities while reducing congestion.

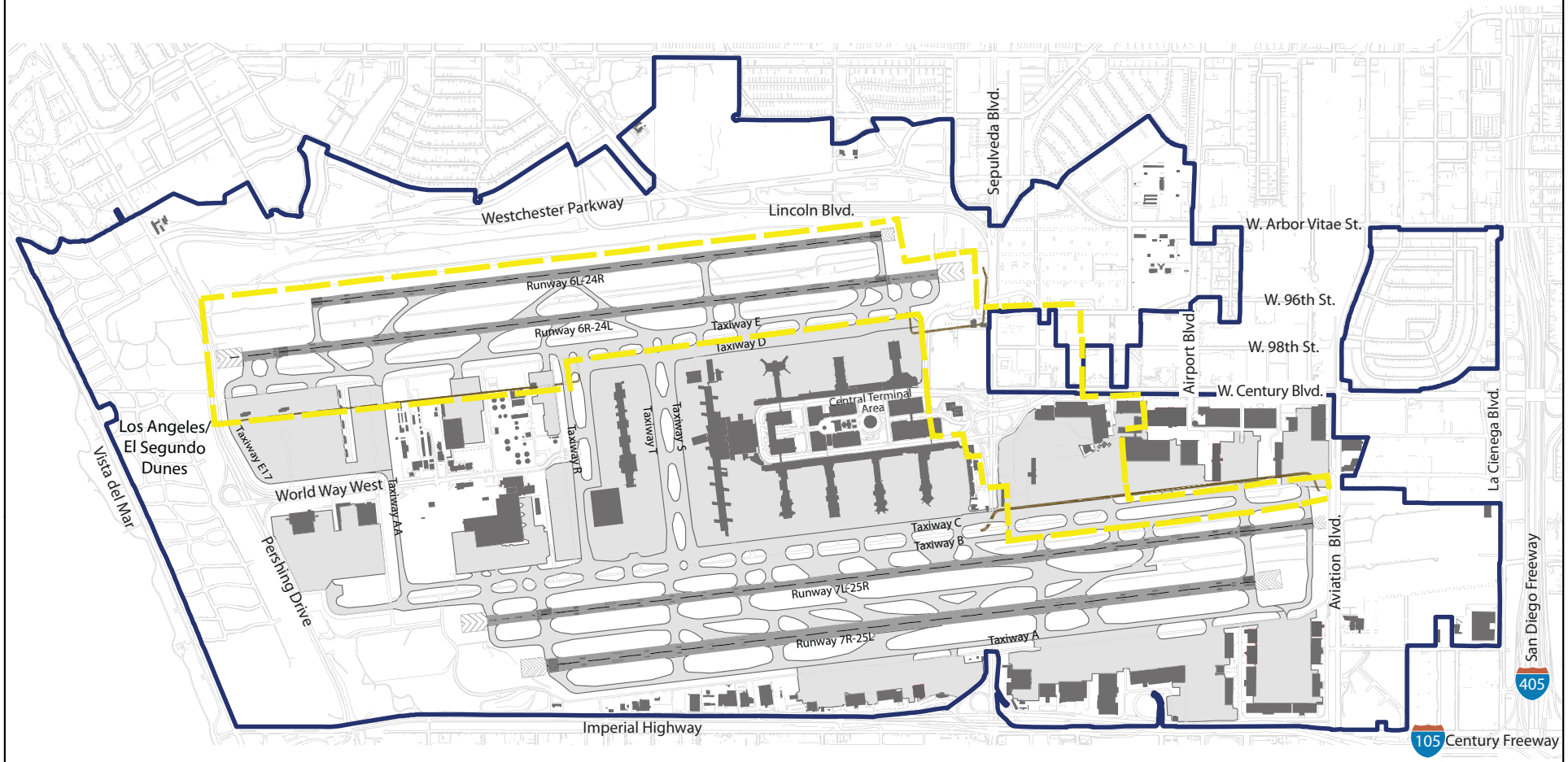
1.1.2 Project Location

As shown in **Figure 1-1**, the Project is located within the City of Los Angeles, at LAX on LAWA property. The Project is located within the LAX Plan area of the City of Los Angeles, which is in the County of Los Angeles. LAX is the primary airport for the greater Los Angeles area, encompassing approximately 3,800 acres, and is situated at the western edge of the City of Los Angeles. The proposed Project improvement sites are located within the northern and eastern portions of LAX (**Figure 1-2**). These sites consist of highly-developed land within and adjacent to a busy international airport. In the LAX vicinity, the community of Westchester is located to the north, the City of El Segundo is to the south, the City of Inglewood and unincorporated portions of Los Angeles County are to the east, and the Pacific Ocean lies



Source: CDM Smith, 2018
Prepared by: CDM Smith, October 2020

LAX Airfield and Terminal Modernization Project	Regional Location	Figure 1-1



Sources: Ricondo & Associates, Geographic World Map, ESRI Database, 2018
Prepared by: CDM Smith, October 2020

LAX Airfield and Terminal Modernization Project	Project Location	Figure 1-2

to the west. Regional access to LAX is provided by Interstate 105 (I-105), which runs east-west and is located adjacent to LAX on the south, and the San Diego Freeway (Interstate 405 or I-405), which runs north-south and is located east of LAX. Major roadways serving LAX include Sepulveda Boulevard, Century Boulevard, Imperial Highway, and Lincoln Boulevard.

1.1.3 Project Objectives

Section 15124(b) of the State CEQA Guidelines states that the Project Description shall contain "[a] statement of the objectives sought by the proposed project." In addition, Section 15124(b) of the State CEQA Guidelines further states, "[t]he statement of objectives should include the underlying purpose of the project and may discuss the project benefits."

The underlying purpose of the LAX Airfield and Terminal Modernization Project is to support the ongoing modernization of LAX, to provide excellent passenger service, to support the economic growth and prosperity of the Los Angeles region, and to work closely with neighboring communities to reduce airport-related impacts. The proposed Project would support the ongoing modernization of LAX by enhancing the safety and operational management of the airfield, particularly as related to runway exits; providing a new concourse and terminal to improve the quality of the passenger experience and efficiency of passenger processing; and improving the roadway system to better route airport-related traffic away from the public roads that serve the community. These improvements would help LAX to prepare early for the continued aviation growth that is projected by LAWA, the Southern California Association of Governments (SCAG), and the Federal Aviation Administration (FAA) to occur at LAX over the next several decades. Additionally, the nature and timing of improvements included in the proposed Project are integral to Los Angeles' plans to host the 2028 Olympic and Paralympic Games, with LAX serving as the main portal for athletes, dignitaries, and visitors from around the world.

The Project objectives for the LAX Airfield and Terminal Modernization Project that support the underlying purpose are:

- Airfield Improvements - Enhance the safety and operational management of the LAX airfield while working within the limits of the existing 4-runway system (i.e., do not add or relocate runways). Specifically, the proposed airfield improvements seek to:
  - Enhance safety of the north airfield complex
  - Reconfigure north airfield taxiway and runway exits and intersections to meet current FAA design standards
  - Maintain or enhance airfield operational management
  - Provide additional flexibility for management of aircraft movements on the airfield
- Terminal Improvements – Provide for new modern, spacious, and efficient terminal facilities that support the ability to accommodate the projected future growth in passenger levels at LAX and do so in a manner that offers high-quality passenger service and operational flexibility. Specifically, the proposed terminal improvements seek to:
  - Improve passenger experience, increase airlines' efficiency, and reduce busing activity on the airfield through the removal and replacement of most of the West Remote Gates and the elimination of the associated busing of passengers
  - Improve international and domestic passenger processing capabilities
  - Improve immigration and customs processes for international passengers arriving at LAX
  - Provide additional connections to the previously-approved Automated People Mover (APM) system currently under construction

  - Provide connections to adjacent terminals that will allow passengers to move between terminals without having to go back through security screening

- Roadway System Improvements – In conjunction with providing landside (vehicle) access to the proposed new Terminal 9, develop a comprehensive network of roadway system improvements that will help separate and remove airport-related traffic from the local roadway system. Specifically, the proposed roadway system improvements seek to:
  - Reduce airport traffic back-ups onto public streets and surrounding neighborhoods, including, but not limited to, existing airport-related traffic congestion on Sepulveda Boulevard, especially near the entrance to the tunnel
  - Integrate the proposed roadway system improvements, including landside access to Terminal 9, with the approved LAX Landside Access Modernization Program improvements
  - Simplify driver wayfinding, reduce decision points, and provide more distance for maneuvering
  - Reduce concentration of traffic and roadway facilities at and around the Century Boulevard/Sepulveda Boulevard/CTA interchange area
  - Support access to the Intermodal Transportation Facility (ITF) West that is linked with the APM system, which will encourage use of those facilities and reduce vehicle miles traveled (VMT)
  - Develop an APM station to provide access to the future APM system for passengers and employees of the proposed Terminal 9, as well as other LAX passengers and employees (e.g., flight crews) that utilize hotel facilities nearby, which can help to reduce VMT
- Additional Objectives
  - Generate business development, employment opportunities, and economic activity that draws from the local workforce and benefits the communities located around LAX and the City of Los Angeles
  - Maintain airport operations during construction
  - Implement airport improvements in a sustainable manner that considers the total cost of ownership, including financial, environmental, and social costs
  - Complete construction of the proposed Project prior to the 2028 Olympic and Paralympic Games to be held in Los Angeles

1.1.4 Project Characteristics

The main elements of the proposed Project include airfield improvements, concourse and terminal improvements, and landside roadway improvements. **Figure 1-3** delineates the nature and locations of the specific improvements.

The proposed Project includes the following elements:

- Taxiway D Extension West
- Runway 6L-24R Exits
- Concourse 0
- Terminal 9
- Removal and replacement of 15 of the 18 West Remote Gates
- Roadway System

The proposed westerly extension of Taxiway D would extend Taxiway D from Taxiway P to Taxiway E17 and include relocation of the westerly portion of Vehicle Service Road E. This would improve airfield operational management by segregating eastbound and westbound taxiing aircraft on Taxiway D and Taxiway E (currently the full length of Runway 6R-24L). In addition, the Taxiway D extension would be designed to meet Airplane Design Group (ADG) Group VI separation standards from Taxiway E and the Vehicle Service Road, allowing ADG VI aircraft to use the Taxiway D extension instead of Taxiway E to avoid operational restrictions during ADG VI arrival and departure operations on Runway 6R-24L. The extension of Taxiway D to the west would require the removal of nine existing west remote passenger gates (described below).

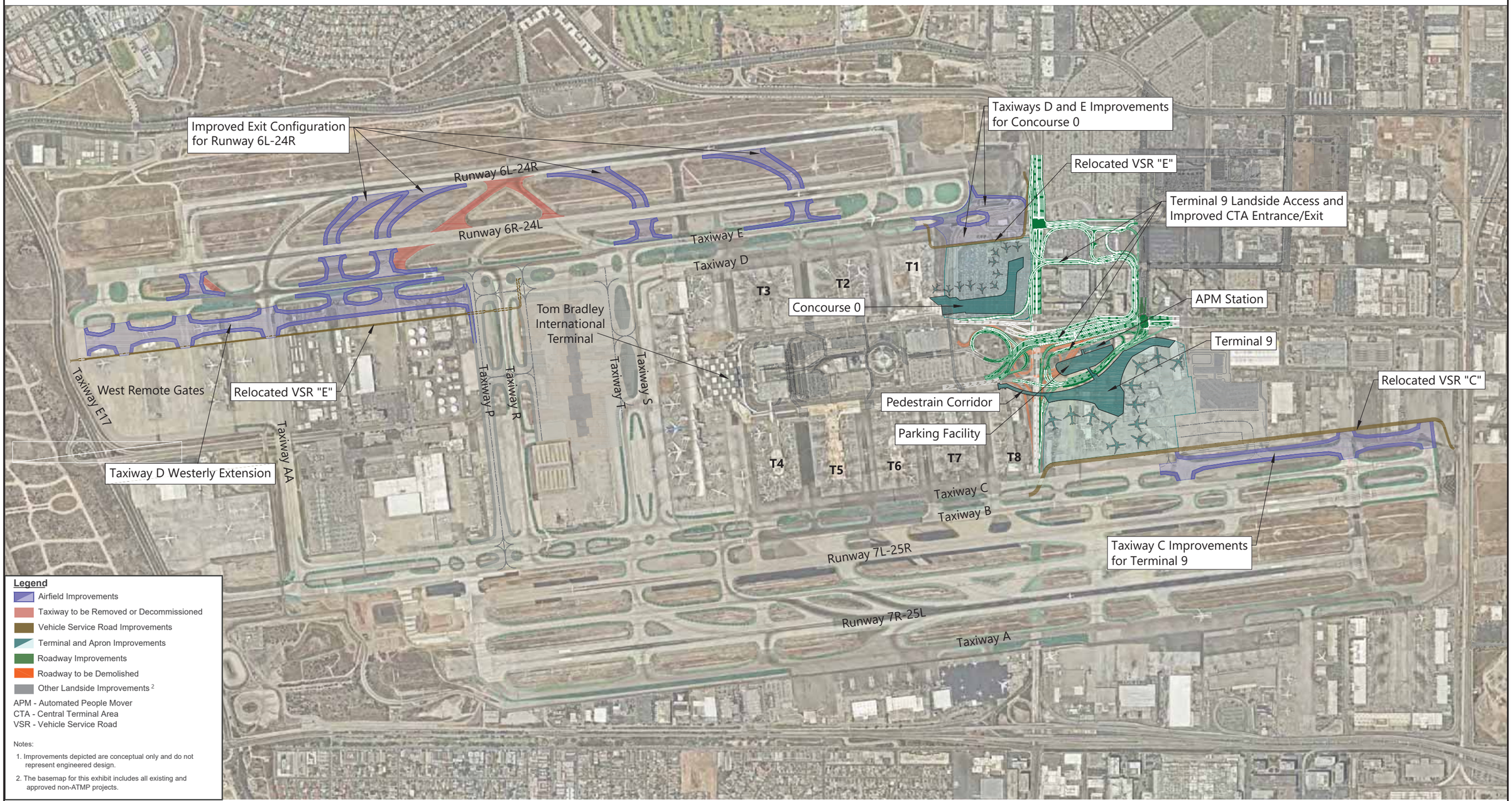
The proposed Project includes the construction of new acute-angled exits on Runway 6L-24R that would cross Runway 6R-24L outside the high-energy zones. The improvements include two new exits for West Flow conditions (i.e., for Runway 24R when aircraft are arriving in a westward direction, which is the majority of time at LAX) and two new exits for East Flow conditions (i.e., for Runway 6L when aircraft are arriving in an eastward direction). The construction of new exits that would cross outside the high-energy zones would be accompanied by the removal or decommissioning of the existing exits that cross the high-energy zones (i.e., existing Taxiways Y and Z). The new West Flow exits on Runway 24R would be located between Taxiways AA and the to-be-demolished Taxiway Z, and the new East Flow exits on Runway 6L would be located east and west of Taxiway W. In conjunction with the safety benefits of relocating runway exits outside of the high-energy zones, the new acute-angled exits would curve to provide crossings that are perpendicular to Runway 6R-24L, as opposed to the existing exits that cross Runway 6R-24L at an acute angle. Perpendicular crossings have safety benefits by providing pilots in arriving aircraft a better line of vision, allowing them to look down Runway 6R-24L for possible departing aircraft.

Concourse 0 is planned as a concourse facility, with up to 11 narrowbody aircraft gates that would attach to, and extend to the east of, Terminal 1. The new gates at Concourse 0, along with the new gates at Terminal 9, would serve to replace most of the existing West Remote Gates, as further described below. The two westernmost gates at Concourse 0 would replace the two easternmost existing gates at Terminal 1, resulting in a net increase of up to nine new narrowbody gates.[1] Concourse 0 would consist of up to seven levels, including four levels for the proposed concourse/passenger operations and potentially three additional levels of office space that LAWA is considering as an option. There would be a total floor area of up to 745,000 square feet for concourse/passenger operations, and potentially up to an additional 318,000 square feet of office space used for administrative purposes. Concourse 0 would serve both domestic and international flights. International operations would be supported with sterile[2] circulation for international arrivals, a fully contained U.S. Customs and Border Protection (CBP) Federal Inspection Services (FIS) area, international baggage claim, and a sterile bus drop-off platform for passenger busing operations, if needed. Passengers arriving at or departing from Concourse 0 would process or transfer through Terminal 1 and/or the future Terminal 1.5.[3] There would be no curbside access at Concourse 0

[1] Concourse 0 could accommodate up to five widebody aircraft and three narrowbody aircraft, instead of 11 narrowbody aircraft, using the same gates and passenger boarding bridges available for 11 narrowbody aircraft; however, because the primary operator at Concourse 0 is expected to be Southwest Airlines, which currently only has narrowbody aircraft in its fleet, the primary use of the subject facility is anticipated to be for narrowbody aircraft.

[2] "Sterile" areas are circulation (i.e., corridors) or holding areas that are restricted to cleared passengers. Sterile areas may be secured with access control solutions that include automatic alarms, closed-circuit television (CCTV) cameras, staffed personnel, and directional signage. CBP maintains sterility to prevent mixing of cleared and uncleared passengers, as well as the potential for contraband exchange.

[3] Terminal 1.5 is a facility currently under construction west of Terminal 1 and east of Terminal 2. Terminal 1.5 will include passenger and baggage screening, ticketing, and baggage claim facilities in support of existing operations within Terminals 1 and 2; a secure passenger connection (i.e., enclosed/controlled corridor) between existing Terminals 1 and 2; and office and support space.



Source: Ricondo & Associates, Inc., 2019
Prepared by: CDM Smith, October 2020

LAX Airfield and Terminal Modernization Project

LAX Airfield and Terminal Modernization Project Elements

Figure
1-3

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(i.e., no drop-off or pick-up curb for passengers). Pedestrian access at Concourse 0 would be provided through Terminal 1 on both the arrivals level and the departures level and through a vertical circulation Terminal 1. This interface would connect to an APM station (the station and associated vertical circulation core and elevated pedestrian walkway were previously approved as part of the LAX Landside Access Modernization Program).[4] Concourse 0 would require airfield improvements to support the facility, including aircraft parking apron and taxiway improvements.

Terminal 9 is planned as a 12-gate international and domestic terminal facility with capability to support ADG VI operations using widebody aircraft. Alternatively, Terminal 9 could also accommodate up to 18 narrowbody aircraft at the same time, utilizing the same gates and passenger boarding bridges as otherwise available for 12 widebody aircraft.[5] Terminal 9 would primarily serve international flights, with capabilities to also serve domestic flights. In light of current and anticipated future growth in international flights to and from LAX, it is anticipated that Terminal 9 would be utilized primarily by widebody aircraft. The new gates associated with Terminal 9, along with the gates associated with Concourse 0, would serve to replace existing West Remote Gates that would be eliminated by the proposed westerly extension of Taxiway D or otherwise decommissioned. The number of gates is discussed further below. Terminal 9 would be a 1,178,000-square-foot, independently operating, four-level facility with a central passenger processing core, a concourse that extends to the west of the core, a concourse that extends to the east of the core, and a pedestrian connector to Terminal 8. All of the necessary passenger processing functions would be provided within Terminal 9. Terminal 9 would serve both domestic and international flights. International operations would be supported with sterile circulation for international arrivals, a fully contained CBP FIS area, international baggage claim, and both a secure (domestic) and a sterile (international) bus curb for passenger busing operations, if needed. Development of the connector between Terminals 8 and 9 would require construction of a vertical circulation core at the westerly end of the connector, which would require some modifications within Terminal 8 at the interface with the new vertical circulation core (specifically, a portion of the face of Terminal 8 would be opened so that various interior levels of the vertical core can be connected with the respective interior levels of Terminal 8). Terminal 9 would require airfield improvements to support the facility, including aircraft parking apron and taxiway improvements.

As indicated above, the westward extension of Taxiway D would result in the removal of nine West Remote Gates. As part of the proposed Project, although not required due to the extension of Taxiway D, an additional six West Remote Gates would be decommissioned. These 15 West Remote Gates would be replaced by the new gates associated with Concourse 0 and Terminal 9. With implementation of the proposed Project, 15 of the existing 18 West Remote Gates would no longer be used for regularly-scheduled commercial flights. The three remaining West Remote Gates would be retained to provide operational flexibility, such as for intermittent use if needed during peak surges in activity, if several CTA gates are out of service for maintenance, or for special flights requiring additional security and special logistics (e.g., Air Force One). The number of gates associated with the West Remote Gates area, Concourse 0, and Terminal 9 under existing conditions and with implementation of the proposed Project is provided in **Table 1-1**. Concourse 0 is proposed as an 11-gate concourse facility, at which

[4] City of Los Angeles, Los Angeles World Airports, *Final Environmental Impact Report for Los Angeles International Airport (LAX) Landside Access Modernization Program*, (SCH 2015021014), Section 2.4.1.2.2. - Stations, Pedestrian Walkways, and Vertical Circulation Cores, February 2017. Available: https://www.lawa.org/en/connectinglax/automated-people-mover/documents.

[5] Terminal 9 is proposed to include a Multiple Aircraft Ramp System (MARS) to provide LAWA with the operational flexibility to serve multiple aircraft fleet-mixes over time. The gates at Terminal 9 could accommodate up to 12 wide-body aircraft, or up to 18 narrowbody aircraft, or various combinations thereof.

11 narrowbody aircraft could utilize all of those gates at the same time. Alternatively, Concourse 0 could also accommodate up to five widebody aircraft and three narrowbody aircraft at the same time, utilizing the same gates and passenger boarding bridges as otherwise available for 11 narrowbody aircraft. It is anticipated that Southwest Airlines would be the primary operator of Concourse 0 for the foreseeable future, and Southwest Airlines currently only has narrowbody aircraft in its fleet.

Table 1-1
West Remote Gates and Passenger Gates with Implementation of Concourse 0 and Terminal 9

Location	Existing Conditions			Future Conditions with Proposed Project			
	Remote Gates	Contact Gates	Total Gates	Remote Gates	Contact Gates	Total Gates	Net Change in Gates
West Remote Gates	18	0	**18**	3	0	**3**	**-15**
Concourse 0[1, 2]	0	0	**0**	0	6 - 9	**6 - 9**	**6 - 9**
Terminal 9[3]	0	0	**0**	0	12 - 18	**12 - 18**	**12 - 18**
Total	**18**	**0**	**18**	**3**	**18 - 27**	**21 - 30**	**3 - 12**

Source: LAWA, 2019.

Notes:

1 Passenger gates at Concourse 0 reflect net new gates. As described in Section 2.4.2.1, two of the new gates at Concourse 0 would replace two existing gates at Terminal 1 that would be removed as a result of Concourse 0.

2 As described in Section 2.4.2.1, Concourse 0 could accommodate up to 11 narrowbody aircraft or up to five widebody aircraft along with three narrowbody aircraft. As such, the number of net new gates, with the loss of two existing gates at Terminal 1, would be between six and nine.

3 As described in Section 2.4.2.2, Terminal 9 could accommodate up to 12 widebody aircraft or up to 18 narrowbody aircraft. As such, the number of new gates would be between 12 and 18.

Similar to the descriptions above of Concourse 0 and Terminal 9, the existing West Remote Gates currently can be used by a combination of narrowbody and widebody aircraft, depending on needs at the time. The accounting of gates associated with Concourse 0, Terminal 9, and the West Remote Gates depends on their utilization by aircraft type, in terms of narrowbody aircraft or widebody aircraft, which can vary over time, even during the course of the day. The gate counts presented in Table 1-1 are based on the anticipated predominant use of the gates.

The proposed Project would include arrival and departure roadways and a parking facility to support the Terminal 9 passenger facility, along with new roadway segments that would improve vehicle access to, and egress from, the existing CTA. As part of these improvements, certain segments of existing roadways near Century Boulevard and Sepulveda Boulevard would be demolished. The landside improvement plan would also include construction of a seventh APM station at Terminal 9 on the previously approved LAX APM line, as well as construction of a pedestrian corridor between Terminals 8 and 9 that would bridge across Sepulveda Boulevard. The proposed roadway system would improve overall access to and from the CTA, and would serve Terminal 9, with a combination of segments that are elevated or at-grade, with connecting ramps.

The proposed Project would also include various other elements to support the primary project components, including:

- Utilities infrastructure, both new and modified to support the proposed Project, including domestic water, fire water, reclaimed water, electrical and communication systems, natural gas and fuel systems, and stormwater and wastewater systems
- Land acquisition, subdivision of parcels, and/or other reconfiguration of parcels, dedications and vacations of public rights-of-way

- Building design and construction features in accordance with LAWA's Sustainable Design and Construction Policy, which requires that new buildings be designed to achieve a minimum of the United States Green Building Council's Leadership in Energy and Environmental Design (LEED®) Silver certification.[6]
- Enabling projects to allow construction of the proposed Project, including utility relocation and demolition of certain existing facilities
- Streetscape improvements and public street improvements, including sidewalks, curbs and gutters

The elements of the proposed Project are shown in Figure 1-3.

1.2 Purpose of this Draft EIR

Because the proposed Project may have a significant effect on the environment, CEQA requires preparation of this Draft EIR. LAWA has undertaken this Draft EIR for the following purposes, as required by CEQA:

- To evaluate the potentially significant environmental effects associated with the implementation of the proposed Project;
- To indicate the manner in which those significant impacts can be avoided or substantially lessened;
- To identify any significant and unavoidable adverse impacts that cannot be mitigated;
- To identify a reasonable range of potentially feasible alternatives to the proposed Project that would attain most of the Project objectives and eliminate any significant adverse environmental impacts or substantially lessen any of the significant effects;
- To inform the general public, the local community, and responsible trustee, State, and federal agencies of the nature of the proposed Project, its potentially significant environmental effects, feasible mitigation measures to mitigate those effects, and a reasonable range of potentially feasible alternatives;
- To enable LAWA decision-makers to consider the environmental consequences of the proposed Project and make findings regarding each significant effect that is identified; and
- To facilitate any responsible agencies in issuing permits and approvals for the proposed Project.

Prior to approving the proposed Project, LAWA would be required to certify the EIR. Upon certification, the EIR would serve as the environmental document for LAWA and would be used as a basis for decisions on implementation of the proposed Project. Other agencies may also use this EIR in their review and approval processes.

This Draft EIR was prepared in accordance with Section 15151 of the State CEQA Guidelines, which defines the standards for EIR adequacy as follows:

> An EIR should be prepared with a sufficient degree of analysis to provide decision makers with information which enables them to make a decision which intelligently takes account of environmental consequences. An evaluation of the environmental effects of a proposed project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in the light of what is reasonably feasible. Disagreement among experts does not make an EIR inadequate, but the EIR should summarize the main points of disagreement among the experts. The

[6] City of Los Angeles, Los Angeles World Airports, *LAWA Sustainable Design and Construction Policy*, September 7, 2017. Available: https://www.lawa.org/-/media/lawa-web/tenants411/file/lawa-sustainable-design-and-construction-policy.ashx.

courts have looked not for perfection, but for adequacy, completeness, and good faith effort at full disclosure.

1.3 Organization of this Draft EIR

This Draft EIR follows the preparation and content guidance provided by CEQA and the State CEQA Guidelines. Listed below is a summary of the contents of each chapter of this report.

Chapter 1 – Introduction and Executive Summary

This chapter provides a summary of the proposed Project, CEQA compliance requirements, an overview of the report organization, and a discussion of areas of controversy known to LAWA and issues to be resolved. Also included is a summary of the environmental analysis, including impacts and mitigation measures, and identification of the environmentally superior alternative.

Chapter 2 – Description of the Proposed Project

Chapter 2 presents the location of the proposed Project, the objectives of the proposed Project, and a description of the elements, enabling projects, and construction schedule of the proposed Project. In addition, Chapter 2 identifies the intended use of the EIR and the approvals required for implementation of the proposed Project.

Chapter 3 – Overview of Project Setting

Chapter 3 provides an overview of the existing land use, environmental, and development setting related to the proposed Project area and the environmental resources evaluated in Chapter 4, *Environmental Impact Analysis*, of this EIR. This chapter also describes other projects at and immediately adjacent to LAX that, in conjunction with the proposed Project, need to be considered in order to assess cumulative impacts.

Chapter 4 – Environmental Impact Analysis

The introductory section of Chapter 4 describes the analytical framework for the environmental review of the proposed Project. The remaining sections of the chapter provide detailed analysis of the potential environmental impacts of the proposed Project:

- Section 4.1 Air Quality and Human Health Risk
  - Section 4.1.1 Air Quality
  - Section 4.1.2 Human Health Risk
- Section 4.2 Cultural Resources (Historical Resources)
- Section 4.3 Energy
- Section 4.4 Greenhouse Gas Emissions
- Section 4.5 Hazardous Materials
- Section 4.6 Land Use and Planning
- Section 4.7 Noise
  - Section 4.7.1 Aircraft Noise
  - Section 4.7.2 Roadway Traffic Noise
  - Section 4.7.3 Construction Traffic and Equipment Noise and Vibration
- Section 4.8 Transportation

- Section 4.9 Utilities
  - Section 4.9.1 Water Supply
  - Section 4.9.2 Wastewater Generation

For each environmental resource, the individual sections describe: methodology used in the impact analysis; existing conditions; thresholds of significance; environmental impacts (construction and operation) that would result from the proposed Project; applicable mitigation measures that would eliminate or reduce significant impacts, if warranted; cumulative impacts; and the level of significance of impacts after mitigation.

Chapter 5 – Alternatives

As required by CEQA, Chapter 5 identifies and evaluates a range of potentially feasible alternatives that may avoid or substantially reduce any significant effects of the proposed Project.

Chapter 6 – Other Environmental Considerations

Chapter 6 includes a discussion of issues required by CEQA that are not covered in Chapter 4. These include unavoidable significant impacts, irreversible environmental changes, growth inducing impacts, and the impacts of the proposed Project determined to be less than significant.

Chapter 7 – List of Preparers, Organizations and Persons Consulted, List of Acronyms, and List of References

Chapter 7 provides the following: a list of the individuals from the City of Los Angeles and contractors that performed key roles in the preparation and development of this Draft EIR; a list of agencies and organizations who were consulted in the preparation of this Draft EIR; a list of acronyms used in this Draft EIR; and the bibliography of documents used in the preparation of this Draft EIR.

Due to the COVID-19 pandemic and social distancing recommendations, documents listed in Section 7.2, *List of References*, of Chapter 7 are available for public inspection upon request by contacting LAWA's Environmental Planning Division at LAXPlanning@lawa.org or (800) 919-3766.

Appendices

The appendices present data supporting the analysis contained in the Draft EIR. The appendices in this Draft EIR include:

- Appendix A – Notice of Preparation/Scoping
- Appendix B – Activity Forecasts and Operational Analyses
- Appendix C – Air Quality, Human Health Risk Assessment, Greenhouse Gas Emissions, and Energy
- Appendix D – Historic Resources Technical Report
- Appendix E – Hazardous Materials
- Appendix F – Noise
  - Appendix F.1 – Aircraft Noise Analysis Technical Report
  - Appendix F.2 – Roadway Traffic Noise Analysis Technical Report
  - Appendix F.3 – Construction Equipment Noise Analysis Technical Report
- Appendix G – Transportation
- Appendix H – Water Supply Assessment

1.4 Summary of Environmental Impacts

Table 1-2 summarizes the environmental impacts from construction and operation of the proposed Project for each of the nine resource topics analyzed in Chapter 4, *Environmental Impact Analysis*, of this Draft EIR. Included in the summary for each topic are: an overview of the environmental impact; the determination of whether the impact is significant; an indication of applicable mitigation, including the mitigation measure(s) reference number(s) (see relevant sections in Chapter 4 for complete mitigation measure descriptions); and the level of impact significance after mitigation.

Table 1-2
Summary of Potential Impacts and Mitigation Measures Associated with the Proposed Project

Environmental Impacts	Impact Determination	Mitigation Measures	Level of Significance After Mitigation
Air Quality			
Impact 4.1.1-1: Construction of the proposed Project would result in estimated incremental increases in construction-related emissions that are greater than the daily mass emission thresholds established by South Coast Air Quality Management District (SCAQMD). This would be a ***significant and unavoidable impact*** for construction.	Construction: Significant (oxides of nitrogen [NO_X]) Significant (carbon monoxide [CO], volatile organic compounds [VOC], sulfur dioxide [SO_X]; short-term – approx. 4.5 months)[1] Operations: Not Applicable	Construction: MM-AQ/GHG (ATMP)-1. Rock Crushing Operations. MM-AQ/GHG (ATMP)-2. Use of Renewable Diesel Fuel. MM-C (ATMP)-1. Construction Mitigation Oversight. Operations: Not Applicable	Construction: Significant and Unavoidable (NO_X) Significant and Unavoidable (CO, VOC, SO_X; short-term – approx. 4.5 months)[1] Operations: Not Applicable
Impact 4.1.1-2: Operation of the proposed Project would result in estimated incremental increases in operations-related emissions that are greater than the daily mass emission thresholds established by SCAQMD. This would be a ***significant and unavoidable impact*** for operations.	Construction: Not Applicable Operations: Significant (NO_X, SO_X, PM_{10}, $PM_{2.5}$)	Construction: Not Applicable Operations: MM-AQ/GHG (ATMP)-3. Parking Cool Roof. MM-AQ/GHG (ATMP)-4. EV Charging Infrastructure. MM-AQ/GHG (ATMP)-5. Electric Vehicle Purchasing. MM-AQ/GHG (ATMP)-6. Solar Energy Technology. MM-T (ATMP)-1. Vehicle Miles Traveled (VMT) Reduction Program.	Construction: Not Applicable Operations: Significant and Unavoidable (NO_X, SO_X, PM_{10}, $PM_{2.5}$)
Impact 4.1.1-3: Construction of the proposed Project would result in estimated incremental ambient concentrations due to construction-related emissions that would be less than the concentration thresholds established by SCAQMD. This would be a ***less than significant impact*** for construction.	Construction: Less than Significant Operations: Not Applicable	No mitigation is required	Construction: Less than Significant Operations: Not Applicable

Table 1-2
Summary of Potential Impacts and Mitigation Measures Associated with the Proposed Project

Environmental Impacts	Impact Determination	Mitigation Measures	Level of Significance After Mitigation
Impact 4.1.1-4: Operation of the proposed Project would result in estimated incremental ambient concentrations due to operations-related emissions that would be greater than the concentration thresholds established by SCAQMD. This would be a ***significant and unavoidable impact*** for operations.	Construction: Not Applicable Operations: Significant (PM_{10})	Construction: Not Applicable Operations: MM-AQ/GHG (ATMP)-3. Parking Cool Roof. MM-AQ/GHG (ATMP)-4. EV Charging Infrastructure. MM-AQ/GHG (ATMP)-5. Electric Vehicle Purchasing. MM-AQ/GHG (ATMP)-6. Solar Energy Technology. MM-T (ATMP)-1. Vehicle Miles Traveled (VMT) Reduction Program.	Construction: Not Applicable Operations: Significant and Unavoidable (PM_{10})
Human Health Risk			
Impact 4.1.2-1: The proposed Project would not increase incremental cancer risk greater than, or equal to, 10 in 1 million (10 x 10-6) for potentially exposed off-airport workers, residents, or school children. This would be a ***less than significant impact*** for construction and operations.	Construction: Less than Significant Operations: Less than Significant	Construction: No mitigation is required Operations: No mitigation is required	Construction: Less than Significant Operations: Less than Significant
Impact 4.1.2-2: The proposed Project would not result in a cancer burden greater than, or equal to 0.5 excess cancer cases in areas within the greater than 1 in 1 million zone of impact. This would be a ***less than significant impact*** for construction and operations.	Construction: Less than Significant Operations: Less than Significant	Construction: No mitigation is required Operations: No mitigation is required	Construction: Less than Significant Operations: Less than Significant
Impact 4.1.2-3: The proposed Project would not result in a total incremental chronic hazard index (HI) greater than, or equal to, 1 for any target organ system at any receptor location. This would be a ***less than significant impact*** for construction and operations.	Construction: Less than Significant Operations: Less than Significant	Construction: No mitigation is required Operations: No mitigation is required	Construction: Less than Significant Operations: Less than Significant

Table 1-2
Summary of Potential Impacts and Mitigation Measures Associated with the Proposed Project

Environmental Impacts	Impact Determination	Mitigation Measures	Level of Significance After Mitigation
Impact 4.1.2-4: The proposed Project would not result in a total incremental acute HI greater than, or equal to, 1 for any target organ system at any receptor location. This would be a ***less than significant impact*** for construction and operations.	Construction: Less than Significant Operations: Less than Significant	Construction: No mitigation is required Operations: No mitigation is required	Construction: Less than Significant Operations: Less than Significant
Impact 4.1.2-5: The proposed Project would not result in an exceedance of Permissible Exposure Limits - Time Weighted Average or Threshold Limit Values for workers. This would be a ***less than significant impact*** for construction and operations.	Construction: Less than Significant Operations: Less than Significant	Construction: No mitigation is required Operations: No mitigation is required	Construction: Less than Significant Operations: Less than Significant
Cultural Resources (Historical Resources)			
Impact 4.2-1: Implementation of the proposed Project would not cause a substantial adverse change in the significance of a historical resource pursuant to State CEQA Guidelines Section 15064.5. This would be a ***less than significant impact*** for construction and operations.	Construction: Less than Significant Operations: Less than Significant	No mitigation is required	Construction: Less than Significant Operations: Less than Significant
Energy			
Impact 4.3-1: The proposed Project would not result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operations. As such, this would be a ***less than significant impact*** for construction and operations.	Less than Significant	No mitigation is required	Less than Significant
Impact 4.3-2: The proposed Project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. As such, there would be ***no impact*** for construction and operations.	No Impact	No mitigation is required	No Impact

Table 1-2
Summary of Potential Impacts and Mitigation Measures Associated with the Proposed Project

Environmental Impacts	Impact Determination	Mitigation Measures	Level of Significance After Mitigation
Greenhouse Gas Emissions			
Impact 4.4-1: Construction and operation of the proposed Project would generate GHGs, directly and indirectly, that may have a significant impact on the environment. This would be a ***significant and unavoidable impact*** for construction and operations.	Construction and operations combined: Significant	Construction: MM-AQ/GHG (ATMP)- 1. Rock Crushing Operations. MM-AQ/GHG (ATMP)-2. Use of Renewable Diesel Fuel. MM-GHG (ATMP)-1. Demolition Waste. MM-C (ATMP)-1. Construction Mitigation Oversight. Operations: MM-AQ/GHG (ATMP)-3. Parking Cool Roof. MM-AQ/GHG (ATMP)-4. EV Charging Infrastructure. MM-AQ/GHG (ATMP)-5. Electric Vehicle Purchasing. MM-AQ/GHG (ATMP)-6. Solar Energy Technology. MM-GHG (ATMP)-2. Organic Waste Collection and Diversion. MM-GHG (ATMP)-3. Green Procurement. MM-GHG (ATMP)-4. Enhanced Recycling. MM-GHG (ATMP)-5. Landscaping Water. MM-T (ATMP)-1. Vehicle Miles Traveled (VMT) Reduction Program.	Construction and operations combined: Significant and Unavoidable
Impact 4.4-2: Construction and operation of the proposed Project would conflict with applicable plans, policies, or regulations adopted for the purpose of reducing the emissions of GHGs. This would be a ***significant and unavoidable impact*** for construction and operations.	Construction and operations GHG combined: Significant	Construction: MM-AQ/GHG (ATMP)-1. Rock Crushing Operations. MM-AQ/GHG (ATMP)-2. Use of Renewable Diesel Fuel. MM-GHG (ATMP)-1. Demolition Waste. MM-C (ATMP)-1. Construction Mitigation Oversight. Operations: MM-AQ/GHG (ATMP)-3. Parking Cool Roof. MM-AQ/GHG (ATMP)-4. EV Charging Infrastructure.	Construction and operations combined: Significant and Unavoidable

Table 1-2
Summary of Potential Impacts and Mitigation Measures Associated with the Proposed Project

Environmental Impacts	Impact Determination	Mitigation Measures	Level of Significance After Mitigation
		MM-AQ/GHG (ATMP)-5. Electric Vehicle Purchasing. MM-AQ/GHG (ATMP)-6. Solar Energy Technology. MM-GHG (ATMP)-2. Organic Waste Collection and Diversion. MM-GHG (ATMP)-3. Green Procurement. MM-GHG (ATMP)-4. Enhanced Recycling. MM-GHG (ATMP)-5. Landscaping Water. MM-T (ATMP)-1. Vehicle Miles Traveled (VMT) Reduction Program.	
Cumulative impacts: Construction and operation of the proposed Project would result in an incremental increase in GHG emissions. This would be a ***cumulatively considerable*** contribution for construction and operations.	Construction and operations combined: Cumulatively considerable	Construction: MM-AQ/GHG (ATMP)-1. Rock Crushing Operations. MM-AQ/GHG (ATMP)-2. Use of Renewable Diesel Fuel. MM-GHG (ATMP)-1. Demolition Waste. MM-C (ATMP)-1. Construction Mitigation Oversight. Operations: MM-AQ/GHG (ATMP)-3. Parking Cool Roof. MM-AQ/GHG (ATMP)-4. EV Charging Infrastructure. MM-AQ/GHG (ATMP)-5. Electric Vehicle Purchasing. MM-AQ/GHG (ATMP)-6. Solar Energy Technology. MM-GHG (ATMP)-2. Organic Waste Collection and Diversion. MM-GHG (ATMP)-3. Green Procurement. MM-GHG (ATMP)-4. Enhanced Recycling. MM-GHG (ATMP)-5. Landscaping Water. MM-T (ATMP)-1. Vehicle Miles Traveled (VMT) Reduction Program.	Construction and operations combined: Cumulatively considerable

Table 1-2
Summary of Potential Impacts and Mitigation Measures Associated with the Proposed Project

Environmental Impacts	Impact Determination	Mitigation Measures	Level of Significance After Mitigation
Hazardous Materials			
Impact 4.5-1: The proposed Project would not create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment associated with existing soil and/or groundwater contamination remediation activities. This would result in a ***less than significant impact*** for construction and ***no impact*** for operations.	Construction: Less than Significant Operations: No Impact	Construction: No mitigation is required Operations: No mitigation is required	Construction: Less than Significant Operations: No impact
Impact 4.5-2: Although the proposed Project would be located on sites which are included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 or other government databases, the Project would not create a significant hazard to the public or the environment. This would result in a ***less than significant impact*** for construction and ***no impact*** for operations.	Construction: Less than Significant Operations: No Impact	Construction: No mitigation is required Operations: No mitigation is required	Construction: Less than Significant Operations: No impact
Land Use and Planning			
Impact 4.6-1: Implementation of the proposed Project would not conflict with land use plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect. This would be a ***less than significant impact*** for construction and operations.	Less than Significant	No mitigation is required	Less than Significant

Table 1-2
Summary of Potential Impacts and Mitigation Measures Associated with the Proposed Project

Environmental Impacts	Impact Determination	Mitigation Measures	Level of Significance After Mitigation
Aircraft Noise			
Impact 4.7.1-1 (65 CNEL Contours): Implementation of the proposed Project would generate aircraft noise that would increase noise levels at exterior use areas of noise-sensitive uses that would be newly exposed to 65 CNEL or above during construction (for a 4.5-month period) and operations, as compared to baseline conditions. This would be a ***significant impact*** for construction and operations.	Construction: Significant (short-term, approximately 4.5 months)[1] Operations: Significant	Construction: No feasible mitigation is available. Operations: MM-AN (ATMP)-1. Sound Insulation Programs.	Construction: Significant and unavoidable (short-term, approximately 4.5 months)[1] Operations: Significant and unavoidable
Impact 4.7.1-2 (1.5 dBA Increase in 65 CNEL Contours): Implementation of the proposed Project could cause a temporary construction-related increase in aircraft noise levels of 1.5 dBA or more in areas where noise-sensitive uses are already exposed to the 65 CNEL contour or above compared to baseline conditions. Project implementation would not result in a 1.5 dBA increase within the 65 CNEL contour during operations. This would be a ***significant impact*** for construction and a ***less than significant impact*** for operations.	Construction: Significant (short-term, approximately 4.5 months)[1] Operations: Less than Significant	Construction: No feasible mitigation is available. Operations: No mitigation is required	Construction: Significant and unavoidable (short-term, approximately 4.5 months)[1] Operations: Less than Significant
Impact 4.7.1-3 (Classroom Learning): Implementation of the proposed Project would not cause a substantial increase in the amount of time that aircraft-induced noise would affect classroom learning, as compared baseline conditions, during construction or operations. This would be a ***less than significant impact*** for construction and operations.	Construction: Less than Significant Operations: Less than Significant	Construction: No mitigation is required Operations: No mitigation is required	Construction: Less than Significant Operations: Less than Significant

Table 1-2
Summary of Potential Impacts and Mitigation Measures Associated with the Proposed Project

Environmental Impacts	Impact Determination	Mitigation Measures	Level of Significance After Mitigation
Roadway Traffic Noise			
Impact 4.7.2-1: Future roadway traffic associated with proposed Project operations would not cause existing ambient noise levels at noise-sensitive uses to increase by more than the allowable limits. This would result in a ***less than significant impact*** for operations.	Operations: Less than Significant Construction: Not applicable	Operations: No mitigation is required Construction: Not applicable	Operations: Less than Significant Construction: Not applicable
Impact 4.7.2-2: Future roadway traffic associated with proposed Project operations would not cause future noise levels in the worst-hour to exceed existing ambient noise levels at noise-sensitive uses by 12 dBA or more. This would result in a ***less than significant impact*** for operations.	Operations: Less than Significant Construction: Not applicable	Operations: No mitigation is required Construction: Not applicable	Operations: Less than Significant Construction: Not applicable
Impact 4.7.2-6: Combined roadway traffic noise and aircraft noise associated with operation of the proposed Project would not cause ambient noise levels at noise-sensitive uses to increase by more than the allowable limits. This would result in a ***less than significant impact*** for operations.	Operations: Less than Significant Construction: Not applicable	Operations: No mitigation is required Construction: Not applicable	Operations: Less than Significant Construction: Not applicable
Construction Traffic and Equipment Noise and Vibration			
Impact 4.7.3-1: Construction traffic would not cause existing ambient noise levels measured at the property line of noise-sensitive uses to increase by 3 dBA or more in CNEL. This would result in a ***less than significant impact*** for construction.	Construction: Less than Significant Operations: Not Applicable	Construction: No mitigation is required Operations: Not Applicable	Construction: Less than Significant Operations: Not Applicable

Table 1-2
Summary of Potential Impacts and Mitigation Measures Associated with the Proposed Project

Environmental Impacts	Impact Determination	Mitigation Measures	Level of Significance After Mitigation
Impact 4.7.3-2: Use of construction equipment in association with construction activities would exceed existing ambient exterior noise levels by 5 dBA or more at noise-sensitive uses. This would be a ***significant impact*** for construction**.**	Construction: Significant Operations: Not Applicable	Construction: MM-CN (ATMP)-1. Construction Noise Control Plan. MM-CN (ATMP)-2. Construction Scheduling. MM-CN (ATMP)-3. Construction Equipment. MM-C (ATMP)-1. Construction Mitigation Oversight. Operations: Not Applicable	Construction: Less than Significant Operations: Not Applicable
Impact 4.7.3-3: Implementation of the proposed Project would not generate excessive ground-borne vibration that would exceed damage criteria. This would be a ***less than significant impact*** for construction**.**	Construction: Less than Significant Operations: Not Applicable	Construction: No mitigation is required Operations: Not Applicable	Construction: Less than Significant Operations: Not Applicable
Cumulative Impact: With respect to construction equipment noise, implementation of the proposed Project, in conjunction with other development projects, would result in a ***significant cumulative impact*** for construction. The proposed Project's contribution to this significant cumulative impact would be ***cumulatively considerable***. Cumulative construction traffic noise and construction vibration impacts would be ***less than significant***.	Construction: Cumulatively Significant Operations: Not Applicable	Construction: MM-CN (ATMP)-1. Construction Noise Control Plan. MM-CN (ATMP)-2. Construction Scheduling. MM-CN (ATMP)-3. Construction Equipment. Operations: Not Applicable	Construction: Less than Significant Operations: Not Applicable
Transportation			
Impact 4.8-1: The proposed Project would not conflict with a plan, program, ordinance, or policy addressing the circulation system that would result in a significant impact to the environment. This would be a ***less than significant impact.***	Less than Significant	No mitigation is required	Less than Significant

Table 1-2
Summary of Potential Impacts and Mitigation Measures Associated with the Proposed Project

Environmental Impacts	Impact Determination	Mitigation Measures	Level of Significance After Mitigation
Impact 4.8-2: The proposed Project would generate VMT per employee exceeding 15 percent below the Projected Future Conditions Baseline (2028) VMT per employee (i.e., 20.4). This would be a ***significant impact***.	Significant	MM-T (ATMP)-1. VMT Reduction Program.	Less than Significant
Impact 4.8-3: The proposed Project would increase total passenger VMT over the Projected Future Conditions Baseline (2028). This would be a ***significant impact***.	Significant	MM-T (ATMP)-1. VMT Reduction Program.	Significant and Unavoidable
Impact 4.8-4: The proposed Project would induce substantial additional VMT compared to the Projected Future Conditions Baseline (2028). This would be a ***significant impact***.	Significant	No feasible direct mitigation available. May be able to use VMT reduction credits from excess, if any, employee VMT reductions	Significant and Unavoidable
Impact 4.8-5: The proposed Project would not substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses. This would be a ***less than significant impact***.	Less than Significant	No mitigation is required	Less than Significant
Water Supply			
Impact 4.9.1-1: The proposed Project would not require or result in the relocation or construction of new or expanded water facilities, the construction or relocation of which could cause significant environmental effects. This would be a ***less than significant impact*** for construction and operations.	Construction: Less than Significant Operations: Less than Significant	No mitigation is required	Construction: Less than Significant Operations: Less than Significant
Impact 4.9.1-2: The proposed Project would have sufficient water supplies available to serve the Project and reasonably foreseeable future development during normal, dry, and multiple dry years. This would be a ***less than significant impact*** for construction and operations.	Construction: Less than Significant Operations: Less than Significant	No mitigation is required	Construction: Less than Significant Operations: Less than Significant

Table 1-2
Summary of Potential Impacts and Mitigation Measures Associated with the Proposed Project

Environmental Impacts	Impact Determination	Mitigation Measures	Level of Significance After Mitigation
Wastewater Generation			
Impact 4.9.2-1: The proposed Project would not require or result in the relocation or construction of new or expanded wastewater treatment facilities, the construction or relocation of which could cause significant environmental effects. This would be a ***less than significant impact*** for construction and operations.	Construction: Less than Significant Operations: Less than Significant	No mitigation is required	Construction: Less than Significant Operations: Less than Significant
Impact 4.9.2-2: The proposed Project would not exceed wastewater treatment capacity due to Project-related wastewater treatment demand. There would be ***no impact*** for construction and operations.	Construction: No Impact Operations: No Impact	No mitigation is required	Construction: No Impact Operations: No Impact

Note:
[1] Short-term impacts would result from temporary runway closures during construction.

1.4.1 Significant Unavoidable Impacts

Air Quality

- Construction emissions (Project-related and cumulatively considerable contributions) of the following pollutants:
  - Carbon monoxide (CO) (for two 4.5-month periods)
  - Volatile organic compounds (VOC) (for two 4.5-month periods)
  - Nitrogen oxides (NO_X)
  - Sulfur oxides (SO_X) (for two 4.5-month periods)
- Operational emissions (Project-related and cumulatively considerable contributions) of the following pollutants:
  - NO_X
  - SO_X
  - Respirable particulate matter (PM_{10})
  - Fine particulate matter ($PM_{2.5}$)
- Operational concentrations (Project-related and cumulatively considerable contributions) of the following pollutants:
  - PM_{10}

Greenhouse Gas Emissions

- Net increase in GHG emissions from construction and operations, combined
- Cumulatively considerable contribution to GHG emissions
- Project-related inconsistency with plans/policies related to GHG emission reductions

Noise

- Aircraft Noise
  - Construction
    - Increased noise levels at exterior use areas of noise-sensitive uses to 65 CNEL or above (for two 4.5-month periods)
    - Temporary increase in aircraft noise levels of 1.5 dBA or more within the 65 CNEL contour compared to baseline conditions (for two 4.5-month periods)
  - Operations
    - Increased noise levels at exterior use areas of noise-sensitive uses to 65 CNEL or above

Transportation

- Passenger VMT
- Short-term and Long-term induced VMT
- Cumulatively considerable contribution to VMT impacts

1.5 Alternatives Evaluated in the Draft EIR

As further described in Chapter 5, *Alternatives*, the alternatives to the proposed Project evaluated in detail in the Draft EIR are:

Alternative 1: No Project Alternative. Under the No Project Alternative, none of the improvements and activities proposed for the LAX Airfield and Terminal Modernization Project would occur. It is expected that the proposed Concourse 0 site would be used for surface parking (after the temporary taxi and rideshare pick-up area, termed "LAX-it", is decommissioned), which was its use prior to implementation of LAX-it, because the site is already configured to accommodate vehicle entry, parking, and egress, and had a high utilization rate for parking. Under the No Project Alternative, the Terminal 9 site would continue to be used for airport-related uses (commuter aircraft operations and gates, aircraft parking, cargo handling/storage, and ground support equipment (GSE) facilities). As property acquisition would no longer be required, the private parcels would continue to be used for commercial airport and non-airport parking, and the existing on-airport taxi holding lot would remain in its current location. LAX would continue to experience growth in aircraft operations and passenger activity levels in the future, including through 2028 (the buildout year for the proposed Project), to meet the region's demand for air service. As such, the projected future passenger levels in 2028 under the No Project Alternative would be the same as for the proposed Project (i.e., 110.8 million annual passengers, or MAP). Several improvements are assumed to occur under Alternative 1, including airfield improvements (i.e., Taxiway P), terminal improvements (i.e., Midfield Satellite Concourse [MSC] North project, MSC South project, Terminal 1.5 project, Terminals 2 and 3 modernization, Terminal 3 connection to TBIT, Terminal 4 modernization, Terminal 5 gate downgauging, and Terminal 6 renovation), landside improvements (i.e., LAX Landside Access Modernization Program), and other improvements/facilities (use of Concourse 0 site for surface parking, LAX Northside development, Delta hangar complex demolition). These improvements would reasonably be expected to occur in the foreseeable future if the proposed Project were not approved,

based on current plans. (See State CEQA Guidelines Section 15126.6(e)(3)(C).) Moreover, their implementation is not dependent on the proposed Project.

Alternative 2: Concourse 0 Only Alternative. Under Alternative 2, only Concourse 0 would be constructed as a terminal area element. Concourse 0 is planned as a concourse facility with 8 to 11 aircraft gates[7] that would attach to, and extend to the east of Terminal 1, in the current location of the LAX-it lot. As with the proposed Project, the two westernmost gates at Concourse 0 would replace the two easternmost existing gates at Terminal 1. As such, net new gates for Alternative 2 would be six to nine aircraft gates. The new gates associated with Concourse 0 would serve to replace the nine existing West Remote Gates that would be eliminated by the proposed westerly extension of Taxiway D. The remaining nine of the 18 West Remote Gates would continue to operate. As discussed above in Section 1.1.4, Concourse 0 would consist of up to seven levels, including four levels for the proposed concourse/passenger operations and potentially three additional levels of office space that LAWA is considering as an option. There would be a total floor area of up to 745,000 square feet for concourse/passenger operations, and potentially up to an additional 318,000 square feet of office space used for administrative purposes. In conjunction with construction of the passenger building and aircraft gates, development of Concourse 0 would include construction of an aircraft parking apron, including two aircraft parking positions; the easterly extension of Taxiway D as an ADG V taxiway; the easterly extension of Taxiway E as an unrestricted ADG V/restricted ADG VI taxiway; and the relocation of the easternmost portion of Vehicle Service Road E. A paved area would be located at the eastern ends of Taxiways D and E that could be used for aircraft pushbacks for the northeastern gate at Concourse 0 and could also be used to temporarily hold departing aircraft waiting to access Runway 6R-24L for takeoff.

Alternative 2 would have the same airfield improvements as the proposed Project; however, its terminal improvements would not include construction of Terminal 9, the Terminal 9 parking facility, new APM station, or the taxiway improvements associated with Terminal 9. The landside improvements under Alternative 2 would be the same as the proposed Project, with the exception of the roadway improvements designed to integrate Terminal 9 with the roadway system approved as part of LAMP, which would not be included.

Alternative 3: Terminal 9 Only Alternative. Under Alternative 3, Terminal 9 would be constructed as a terminal area element. Terminal 9 is planned as an international and domestic terminal facility with 12 to 18 gates.[8] The new gates associated with Terminal 9 would serve to replace existing West Remote Gates that would be eliminated by the proposed westerly extension of Taxiway D or otherwise decommissioned. Based on the low end of the range of new gates that could occur at Terminal 9, 12 of the existing West Remote Gates would be removed or decommissioned and six would remain in operation. At the high end of the range for Terminal 9 (i.e., 18 narrowbody gates), 15 of the 18 West Remote Gates would be removed or decommissioned and, similar to the proposed Project, three of the West Remote Gates would remain to provide operational flexibility. As discussed above in Section 1.1.4, Terminal 9 would be a 1,178,000-square-foot, independently operating, four-level facility with a central passenger processing core, concourses that extend to the east and west of the core, and a pedestrian connector to Terminal 8. All necessary passenger processing functions would be provided within Terminal 9. In conjunction with construction of the passenger building and aircraft gates, development of Terminal 9 would include construction of an aircraft parking apron and a taxilane connecting the terminal to the airfield; relocation and easterly extension of Taxilane C from Taxiway C3 to Taxiway B1; and relocation of Vehicle Service

[7] As with the proposed Project, the number of gates for Concourse 0 depends on the size of aircraft (i.e., narrowbody vs. widebody) – see Section 2.4.2.1. Also similar to the proposed Project, the development of Concourse 2 would remove two existing gates from Terminal 1; hence, the range of net new gates would be 6 to 9.

[8] As with the proposed Project, the number of gates for Terminal 9 depends on the size of aircraft (i.e., narrowbody vs. widebody) – see Section 2.4.2.2.

Road C. The relocated vehicle service road would be designed at ADG VI separation from Taxiway C and the relocated/extended Taxilane C would be designed at ADG VI separation from Taxiway B. Other improvements related to Terminal 9 would include construction of a parking facility and a Terminal 9 APM station (platform), and pedestrian corridors connecting these facilities to the terminal.

Alternative 3 would have the same airfield and landside improvements as the proposed Project; however, its terminal improvements would not include construction of Concourse 0, including the proposed paved area that would be located at the eastern ends of Taxiways D and E that could be used for aircraft pushbacks or to temporarily hold departing aircraft waiting to access Runway 6R 24L for takeoff. Under Alternative 3, it is reasonably foreseeable that the site proposed for Concourse 0 would be returned to a surface parking lot when the LAX-it lot is no longer needed because the site is already configured to accommodate vehicle entry, parking, and egress, and had a high utilization rate for parking.

Alternative 4: Approved LAMP Roadway Improvements plus Terminal 9 Access Alternative. Under Alternative 4, both the airfield improvements and the terminal improvements would be the same as the proposed Project. Most of the airfield improvements would occur within the north airfield and would include the westerly extension of Taxiway D in the western portion of the north airfield and the relocation and reconfiguration of runway exits from Runway 6L-24R. The terminal improvements would include construction of Concourse 0 as a new easterly extension of Terminal 1; construction of Terminal 9, a new passenger terminal located southeast of the Sepulveda Boulevard/Century Boulevard intersection, including a new parking facility and APM station; and improvements and modifications to existing taxiways near Concourse 0 and Terminal 9 to facilitate aircraft access to and from the gates at those facilities. However, roadway improvements under Alternative 4 would not include the roadway system developed for the proposed Project. Instead, Alternative 4 would implement the already-approved LAMP Phase 2 roadway system, modified to add access to Terminal 9.

Similar to the proposed Project, the Alternative 4 roadway system would include arrival and departure roadways with new roadway segments that would modify vehicle access to, and egress from, the existing CTA. Similar to the proposed Project, the LAMP Phase 2 roadway improvements would shift northward the entrance to the CTA from northbound Sepulveda Boulevard, which is currently near Century Boulevard just north of the Sepulveda Tunnel, and instead move that access point up to 96th Street. Also similar to the proposed Project is the LAMP Phase 2 design for traffic outbound from the CTA and destined for Sepulveda Boulevard, which would occur via a combination of elevated ramps over Century Boulevard leading north to the intersection of 96th Street and Sepulveda Boulevard. The most notable differences between the two roadway designs pertain primarily to the access routes between the CTA and southbound Sepulveda Boulevard. Under LAMP Phase 2, inbound traffic would take new ramps on the west side of Sepulveda Boulevard to access the CTA, similar to how Sky Way currently connects between southbound Sepulveda Boulevard and the CTA; under the proposed Project, such access would be provided via a new flyover ramp that would cross over Sepulveda Boulevard and circle around on an elevated ramps system to connect to the CTA from the east. Relative to outbound traffic from the CTA to southbound Sepulveda Boulevard, the LAMP Phase 2 roadway design includes CTA exit ramps that connect to Sepulveda Boulevard close to the Sepulveda Tunnel, whereas the proposed Project roadway design would route such traffic out of the CTA on an elevated roadway system that would carry the traffic above, and separate from, the local roadway system before merging back into southbound Sepulveda Boulevard via a flyover ramp that merges at a point well north of, and away from, the Sepulveda Tunnel. As compared to the proposed Project, the Alternative 4 roadway system, which is based on the LAMP Phase 2 roadway design in the area immediately east of the CTA, would not provide extended vehicle queuing areas for vehicles entering the CTA from the north (i.e., from southbound Sepulveda Boulevard) or exiting the CTA heading to the south (i.e., onto southbound Sepulveda Boulevard), and would not create a more consolidated entry point east of Sepulveda Boulevard for vehicles entering the CTA.

1.5.1 Environmentally Superior Alternative

Section 15126.6(e)(2) of the State CEQA Guidelines indicates that an analysis of alternatives to a proposed project shall identify an environmentally superior alternative among the alternatives evaluated in an EIR. The State CEQA Guidelines also state that, should it be determined that the No Project Alternative is the environmentally superior alternative, the EIR shall identify another environmentally superior alternative among the remaining alternatives. With respect to identifying an environmentally superior alternative among those analyzed in this Draft EIR, the range of potentially feasible alternatives includes Alternative 1: No Project Alternative, Alternative 2: the Concourse 0 Only, Alternative 3: Terminal 9 Only, and Alternative 4: Approved LAMP Roadway Improvements plus Terminal 9 Access Alternative.

A comparative summary of the environmental impacts associated with each alternative and the environmental impacts associated with the proposed Project is provided in **Table 1-3**. A more detailed description of the potential impacts associated with each alternative is provided in Chapter 5, *Alternatives*. Pursuant to Section 15126.6(c) of the State CEQA Guidelines, the analysis below addresses the ability of the alternatives to "avoid or substantially lessen one or more of the significant effects" of the proposed Project.

Table 1-3
Summary Comparison of Impacts Associated with the Proposed Project and Alternatives

Resource Category[1]	Proposed Project (After Mitigation)	Alternative 1: No Project	Alternative 2: Concourse 0 Only	Alternative 3: Terminal 9 Only	Alternative 4: LAMP Roadway Improvements plus Terminal 9 Access
Air Quality and Human Health Risk					
Air Quality					
Emissions (Construction)	Significant and Unavoidable (NOx) Significant and Unavoidable (CO, VOC, SOx; short-term – approx. 4.5 months)[2]	Less than Significant	Significant and Unavoidable (NOx) Significant and Unavoidable (CO, VOC, SOx; short-term – approx. 4.5 months)[2]	Significant and Unavoidable (NOx) Significant and Unavoidable (CO, VOC, SOx; short-term – approx. 4.5 months)[2]	Significant and Unavoidable (NOx) Significant and Unavoidable (CO, VOC, SOx; short-term – approx. 4.5 months)[2]
Emissions (Operations)	Significant and Unavoidable (NO_x, SO_x, PM_{10}, $PM_{2.5}$)	Significant and Unavoidable (NO_x, SO_x, PM_{10}, $PM_{2.5}$)	Significant and Unavoidable (NO_x, SO_x, PM_{10}, $PM_{2.5}$)	Significant and Unavoidable (NO_x, SO_x, PM_{10}, $PM_{2.5}$)	Significant and Unavoidable (NO_x, SO_x, PM_{10}, $PM_{2.5}$)
Concentrations (Construction)	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant
Concentrations (Operations)	Significant and Unavoidable (PM_{10})	Significant and Unavoidable (NO_2, PM_{10})	Significant and Unavoidable (NO_2, PM_{10})	Significant and Unavoidable (NO_2, PM_{10})	Significant and Unavoidable (PM_{10})
Human Health Risk					
Cancer Risk	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant
Cancer Burden	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant
Incremental Chronic Hazard	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant
Incremental Acute Hazard	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant
Exceeds Permissible Exposure Limits	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant
Cultural Resources (Historical Resources)					
Substantial Adverse Change in Significance of Historical Resource	Less than Significant	No Impact	Less than Significant	Less than Significant	Less than Significant
Energy					
Wasteful/Inefficient Consumption	Less than Significant	No Impact	Less than Significant	Less than Significant	Less than Significant
Conflict with/Obstruct Energy Efficiency Plans	No Impact	No Impact	No Impact	No Impact	No Impact

Table 1-3
Summary Comparison of Impacts Associated with the Proposed Project and Alternatives

Resource Category[1]	Proposed Project (After Mitigation)	Alternative 1: No Project	Alternative 2: Concourse 0 Only	Alternative 3: Terminal 9 Only	Alternative 4: LAMP Roadway Improvements plus Terminal 9 Access
Greenhouse Gas Emissions					
GHG Generation Impact on Environment	Significant and Unavoidable	Significant and Unavoidable	Significant and Unavoidable	Significant and Unavoidable	Significant and Unavoidable
Conflict with GHG Reduction Plans/Policies/Regulations	Significant and Unavoidable	Significant and Unavoidable	Significant and Unavoidable	Significant and Unavoidable	Significant and Unavoidable
Hazardous Materials					
Unauthorized Release (Construction)	Less than Significant	No Impact	Less than Significant	Less than Significant	Less than Significant
Unauthorized Release (Operations)	No Impact	No Impact	No Impact	No Impact	No Impact
Hazard to Public/Environment (Construction)	Less than Significant	No Impact	Less than Significant	Less than Significant	Less than Significant
Hazard to Public/Environment (Operations)	No Impact	No Impact	No Impact	No Impact	No Impact
Land Use and Planning					
Conflict with Land Use Plans/Policies/Regulations	Less than Significant	No Impact	Less than Significant	Less than Significant	Less than Significant
Noise					
Aircraft Noise					
Increase noise levels at noise-sensitive uses to 65 CNEL or above (Construction)	Significant and Unavoidable (short-term – approx. 4.5 months)[2]	No impact	Significant and Unavoidable (short-term – approx. 4.5 months)[2]	Significant and Unavoidable (short-term – approx. 4.5 months)[2]	Significant and Unavoidable (short-term – approx. 4.5 months)[2]
Increase noise levels at noise-sensitive uses to 65 CNEL or above (Operations)	Significant and Unavoidable	Significant and Unavoidable	Significant and Unavoidable	Significant and Unavoidable	Significant and Unavoidable
Increase by 1.5 dBA or more (Construction)	Significant and Unavoidable (short-term – approx. 4.5 months)[2]	No impact	Significant and Unavoidable (short-term – approx. 4.5 months)[2]	Significant and Unavoidable (short-term – approx. 4.5 months)[2]	Significant and Unavoidable (short-term – approx. 4.5 months)[2]
Increase by 1.5 dBA or more (Operations)	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant
Classroom Learning Disruption	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant
Roadway Traffic Noise					
Operational Roadway Traffic Noise	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant

Table 1-3
Summary Comparison of Impacts Associated with the Proposed Project and Alternatives

Resource Category[1]	Proposed Project (After Mitigation)	Alternative 1: No Project	Alternative 2: Concourse 0 Only	Alternative 3: Terminal 9 Only	Alternative 4: LAMP Roadway Improvements plus Terminal 9 Access
Construction Traffic and Equipment Noise and Vibration					
Construction Traffic Noise	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant
Construction Equipment Noise	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant
Construction Equipment Vibration	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant
Transportation					
Conflict with Transportation Programs/Plans/Ordinances/Policies	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant
VMT per Employee	Less than Significant	No Impact	Less than Significant	Less than Significant	Less than Significant
Daily Passenger VMT	Significant and Unavoidable	Significant and Unavoidable	Significant and Unavoidable	Significant and Unavoidable	Significant and Unavoidable
Induce Additional VMT	Significant and Unavoidable	Significant and Unavoidable	Significant and Unavoidable	Significant and Unavoidable	Significant and Unavoidable
Increase Hazards/Incompatible Use	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant
Utilities					
Water Supply					
Relocation/New Facilities Impacts	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant
Water Demand	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant
Wastewater Generation					
Relocation/New Facilities Impacts	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant
Exceed Wastewater Treatment Capacity	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant

Source: CDM Smith, August 2020.

Notes:
1 Impacts represent both construction and operations, unless otherwise noted.
2 Short-term impacts would result from temporary runway closures during construction.

1.5.1.1 Alternative 1 – No Project

As summarized in Table 1-3, implementation of the No Project Alternative would avoid the proposed Project's significant and unavoidable impacts associated with construction-related air pollutant emissions and short-term increases in aircraft noise levels due to temporary runway closures during construction of the airfield improvements. In addition, the No Project Alternative would avoid the significant, but mitigable, impacts on two noise-sensitive receptors (hotels) due to construction noise and would reduce the severity of the significant impacts at three noise-sensitive receptors. With the implementation of the LAMP Phase 2 roadways instead of the roadway improvements associated with the proposed Project, the No Project Alternative would result in a smaller passenger VMT increase compared to the proposed Project; passenger VMT, however, would be significant and unavoidable under both alternatives. Also, the No Project Alternative would avoid the significant, but mitigable, employee VMT impact. The No Project Alternative would also have comparatively lower impacts or no impacts at all for some environmental issue areas where the proposed Project's impacts would be less than significant, such as related to historical resources, wasteful/inefficient consumption of energy, unauthorized releases of hazardous materials during construction, hazard to the public/environment during construction, and conflict with land use plans/policies/regulations. With respect to impacts that would be more severe under the No Project Alternative as compared to the proposed Project, the No Project Alternative would result in a new significant impact with respect to air pollutant concentrations; specifically, operations under the No Project Alternative would exceed the significance threshold for NO_2 concentrations. The impacts for all other environmental issue areas would be generally similar between the No Project Alternative and the proposed Project.

1.5.1.2 Alternative 2 – Concourse 0 Only

As summarized in Table 1-3, implementation of Alternative 2 would result in the same overall impact conclusions as would the proposed Project. Alternative 2 would not avoid any of the significant and unavoidable impacts of the proposed Project; however, as discussed below, the alternative would result in a significant impact to one pollutant that would not occur under the proposed Project. Additional differences from the proposed Project with respect to the nature and severity of impacts under Alternative 2 are described below.

Under Alternative 2, Terminal 9 would not be constructed and, therefore, there would be comparatively less overall construction-related air pollutant emissions; however, Alternative 2 would still result in significant air pollutant emissions impacts, including impacts associated with the construction-related temporary runway closures. From an operations standpoint, Alternative 2 would have a comparatively worse impact related to air pollutant concentrations than the proposed Project because there would be an exceedance of NO_2 concentrations that would not otherwise occur under the proposed Project. This would be a new significant impact for this pollutant and, as such, would exacerbate the significant and unavoidable operations-related air quality impact. Human health risk impacts under Alternative 2 would be less than those of the proposed Project relative to construction because of less overall construction activity, but would be the same relative to operations-related impacts, all of which would be less than significant. Energy consumption under Alternative 2 would be less than the proposed Project because there would be no Terminal 9. GHG emissions associated with operation of Alternative 2 would be higher than those of the proposed Project because the taxi/idle times for aircraft operations would be comparatively greater, which would result in more GHG emissions. As such, this would exacerbate the significant and unavoidable operations-related GHG impact. Alternative 2 would result in the same significant, unavoidable impacts associated with aircraft noise due to the construction-related temporary runway closures as would the proposed Project. Without the development of Terminal 9, Alternative 2 would avoid a significant construction equipment noise impact at one noise-sensitive receptor (i.e. hotel), and would reduce the severity of impacts at an additional four sensitive receptors; however, the

significant construction equipment noise impacts would be fully mitigated under both the proposed Project and Alternative 2. With regard to transportation impacts, implementation of Alternative 2 would result in slightly greater passenger-related VMT than the proposed Project, which would exacerbate the significant and unavoidable impact associated with the proposed Project. Also, because Alternative 2 would have fewer employees than the proposed Project, the VMT per employee impact would be reduced compared to the proposed Project. With proposed mitigation, the impact related to employment VMT would be reduced to less than significant for both Alternative 2 and the proposed Project. VMT impacts associated with passengers and induced travel would be significant and unavoidable, as they would be for the proposed Project.

1.5.1.3 Alternative 3 – Terminal 9 Only

As summarized in Table 1-3, implementation of Alternative 3 would result in the same overall impact conclusions as would the proposed Project. Alternative 3 would not avoid any of the significant and unavoidable impacts of the proposed Project; however, as discussed below, the alternative would result in a significant impact to one pollutant that would not occur under the proposed Project. Additional differences from the proposed Project with respect to the nature and severity of impacts under Alternative 3 are described below.

Under Alternative 3, Concourse 0 would not be constructed and, therefore, there would be comparatively less overall construction-related air pollutant emissions; however, Alternative 3 would still result in significant air pollutant emissions impacts, including impacts associated with the construction-related temporary runway closures. From an operations standpoint, Alternative 3 would have a comparatively worse impact related to air pollutant concentrations than the proposed Project because there would be an exceedance of NO_2 concentrations that would not otherwise occur under the proposed Project. This would be a new significant impact for this pollutant and, as such, would exacerbate the significant and unavoidable operations-related air quality impact. Human health risk impacts under Alternative 3 would be less than those of the proposed Project relative to construction because of less overall construction activity, but would be the same relative to operations-related impacts, all of which would be less than significant. Energy consumption under Alternative 3 would be less than the proposed Project because there would be no Concourse 0. GHG emissions associated with operation of Alternative 3 would be higher than those of the proposed Project because the taxi/idle times for aircraft operations would be comparatively greater, which would result in more GHG emissions. As such, this would exacerbate the significant and unavoidable operations-related GHG impact. Alternative 3 would result in the same significant, unavoidable impacts associated with aircraft noise due to the construction-related temporary runway closures as would the proposed Project. Without the development of Concourse 0, Alternative 3 would reduce the severity of significant construction noise impacts at three noise-sensitive receptors (i.e., hotels); however, those significant noise impacts would be fully mitigated under both the proposed Project and Alternative 3. With regard to transportation impacts, implementation of Alternative 3 would result in slightly lower passenger-related VMT than the proposed Project. Also, because Alternative 3 would have fewer employees than the proposed Project, the VMT per employee impact would be reduced compared to the proposed Project. With proposed mitigation, the impact related to employment VMT would be reduced to less than significant for both Alternative 3 and the proposed Project. VMT impacts associated with passengers and induced travel would be significant and unavoidable, as they would be for the proposed Project.

1.5.1.4 Alternative 4 – Approved LAMP Roadway System plus Terminal 9 Access

As summarized in Table 1-3, implementation of Alternative 4 would result in the same impact conclusions as would the proposed Project. Alternative 4 would not avoid any of the significant and unavoidable impacts of the proposed Project, although it would reduce the severity of some impacts, as described below.

The construction-related impacts associated with Alternative 4 would be less than those of the proposed Project because the landside (roadway) improvements proposed under this alternative would be less extensive than those of the proposed Project. Nevertheless, Alternative 4 would result in the same significant, unavoidable impacts associated with construction air pollutant emissions, including impacts associated with the construction-related temporary runway closures. Human health risk impacts under Alternative 4 would be slightly less than those of the proposed Project relative to construction because of less overall construction activity, but would be the same relative to operations-related impacts, all of which would be less than significant. GHG emissions associated with Alternative 4 would be similar to the proposed Project. Alternative 4 would result in the same significant, unavoidable impacts associated with aircraft noise due to the construction-related temporary runway closures as would the proposed Project. Implementation of the LAMP Phase 2 roadways in lieu of the proposed Project roadways under Alternative 4 would reduce the severity of the significant construction noise impact at one noise-sensitive receptor (i.e., a hotel); however, that significant noise impact would be fully mitigated under the both proposed Project and Alternative 4. Another difference in impacts between the two development scenarios is related to VMT. Implementation of Alternative 4 would result in slightly lower passenger-related VMT than the proposed Project, which would reduce the severity of this significant and unavoidable impact. VMT impacts associated with passengers and induced travel would be significant and unavoidable, as they would be for the proposed Project.

1.5.1.5 Environmentally Superior Alternative

Alternative 1, the No Project Alternative, is the Environmentally Superior Alternative based on the fact that it would avoid several of the significant and unavoidable impacts of the proposed Project, although it would also result in a new significant impact to one pollutant during operations.

Alternative 4, the Approved LAMP Roadway Improvements plus Terminal 9 Access, is the next best Environmentally Superior Alternative. Alternative 4 would reduce the severity of a significant but mitigable impact related to construction noise and would slightly reduce the severity of the significant and unavoidable impact associated with increased passenger VMT.

While Alternatives 2 and 3 would provide notable benefits relative to reducing, but not avoiding, significant construction-related impacts, some of the key reductions in construction-related impacts would be offset by increased operational impacts, including some that would exacerbate significant and unavoidable impacts. Specifically, although implementation of Alternative 2 or Alternative 3 would help reduce construction-related air pollutant emissions, those reductions during construction would be offset by a new and more severe long-term significant impact associated with operations-related pollutant concentrations (i.e., operations-related NO_2 exceedance and increased GHG emissions) that would not occur with the proposed Project.

1.6 Areas of Known Controversy and Issues to be Resolved

Twenty-eight comment submittals, in the form of comment letters, comment cards, and electronic comment forms, were received by LAWA during the public circulation period for the Notice of Preparation/Initial Study prepared for this EIR. This includes comments received at the Public Scoping Meetings held on April 13th and April 17th, 2019. The primary environmental concerns that pertain to the proposed LAX Airside and Terminal Modernization Project are summarized below. The Notice of Preparation comments are included in **Appendix A** of this Draft EIR.

Transportation

Concerns were expressed regarding potential impacts, including increased traffic congestion, on the roadway system in the vicinity of LAX and whether the proposed Project roadway improvements would conflict with the previously-approved roadway system improvements of the LAX Landside Access Modernization Program. The design and function of the proposed roadway system and its relationship to the LAX Landside Access Modernization Program are discussed in Chapter 2, *Description of the Proposed Project*, and Section 4.8, *Transportation*, of this EIR. Transportation impacts associated with the proposed Project are addressed in Section 4.8. As explained in the introduction to that section, the State CEQA Guidelines were amended in December 2018 to now require that the evaluation of transportation impacts focus on Vehicle Miles Traveled (VMT), instead of on traffic congestion.

Air Quality

Concerns were expressed regarding potential air quality impacts on nearby communities, including businesses to the east of the Project site along Century Boulevard. Potential impacts associated with increased criteria and toxic air pollutant emissions are addressed in Section 4.1, *Air Quality and Human Health Risk*.

Noise

Concerns were expressed regarding the potential for increased aircraft noise impacts to residential and other noise-sensitive receptors in the vicinity of LAX as a result of the proposed Project. In addition, concern has been expressed regarding the potential for proposed elevated roadways to result in increased road traffic noise that could affect uses to the east of the Project site along Century and Sepulveda Boulevards. A detailed analysis of potential aircraft noise, roadway traffic noise, and construction traffic and equipment noise and vibration is provided in Section 4.7, *Noise*.

As indicated in Section 15123.3 of the State CEQA Guidelines, issues to be resolved in conjunction with the Draft EIR include the choice among alternatives and whether and how to mitigate significant impacts. Alternatives to the proposed Project are presented and addressed in Chapter 5, *Alternatives*, and mitigation measures for significant impacts associated with the proposed Project are presented throughout Chapter 4, *Environmental Impacts Analysis.* Consideration of those alternatives and mitigation measures for significant impacts will occur as part of the decision making process for the Project.

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2. DESCRIPTION OF THE PROPOSED PROJECT

2.1 Project Overview

LAWA proposes to implement airfield, terminal, and landside roadway improvements at LAX as part of LAWA's continuing commitment to maintain LAX as a world-class airport. The proposed Project consists of several primary elements, including airfield improvements that would enhance operational management and safety within the north airfield, new terminal facilities to upgrade passenger processing capabilities and enhance the passenger experience, and an improved system of roadways to better access the Central Terminal Area (CTA) and new facilities while reducing congestion.

The majority of the airfield improvements would occur within the north airfield and would include the westerly extension of Taxiway D in the western portion of the north airfield, the relocation and reconfiguration of runway exits from Runway 6L-24R, and "enabling projects" associated with these improvements.

The terminal improvements would include the construction of Concourse 0 as a new easterly extension of Terminal 1; construction of Terminal 9, a new passenger terminal located southeast of the Sepulveda Boulevard/Century Boulevard intersection; improvements and modifications to existing taxiways near Concourse 0 and Terminal 9 to facilitate aircraft access to and from the gates at those facilities; and enabling projects associated with these improvements.

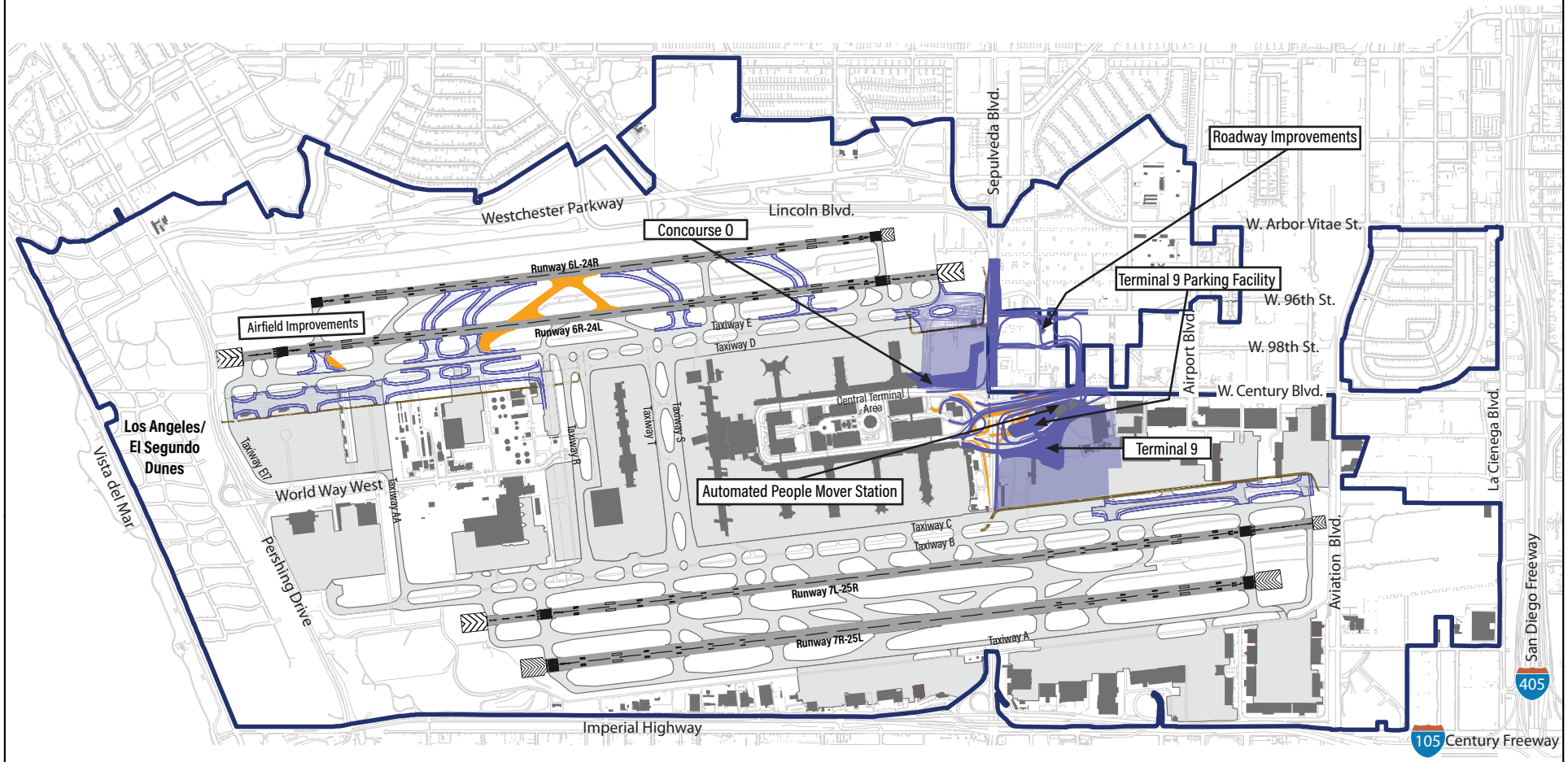
The landside improvements would be comprised of new arrival and departure roadways and a parking facility to support Terminal 9, an additional station on the previously-approved LAX Automated People Mover (APM) line with a pedestrian connection to Terminal 9, a pedestrian corridor between Terminals 8 and 9 that would bridge across Sepulveda Boulevard, new roadway segments that would further improve vehicle access into and out of the LAX CTA, and enabling projects related to these improvements. **Figure 2-1** shows a high-level conceptual view of the proposed Project. Each of the Project elements is described in greater detail below.

2.2 Project Location

2.2.1 Regional Setting

As shown in **Figure 2-2**, the Project is located within the City of Los Angeles, at LAX on LAWA property. The Project is located within the LAX Plan area of the City of Los Angeles, which is in the County of Los Angeles. LAX is the primary airport for the greater Los Angeles area, encompassing approximately 3,800 acres, and is situated at the western edge of the City of Los Angeles.

In the LAX vicinity, the community of Westchester is located to the north, the City of El Segundo is to the south, the City of Inglewood and unincorporated portions of Los Angeles County are to the east, and the Pacific Ocean lies to the west. Regional access to LAX is provided by Interstate 105 (I-105), which runs east-west and is located adjacent to LAX on the south, and the San Diego Freeway (Interstate 405 or I-405), which runs north-south and is located east of LAX. Major roadways serving LAX include Sepulveda Boulevard, Century Boulevard, Imperial Highway, and Lincoln Boulevard.



Legend

- LAX Property Boundary
- Improvements to be Constructed[1]
- Taxiway/Roadway to be Removed/Decommissioned or Demolished

Note:
1. Improvements depicted are conceptual only and do no represent engineered design.

Sources: Ricondo & Associates, Inc., April 2020 (basemap); Los Angeles World Airports, January 2020 (Airport Layout Plan); CDM Smith, April 2020 (Airport Property Line); Ricondo & Associates, Inc., October 2018 (Project Elements); CF Wright Consulting, July 2020 (Roadway Elements)

Prepared by: CDM Smith, October 2020

LAX Airfield and Terminal Modernization Project	LAX Airfield and Terminal Modernization Project Overview	Figure 2-1



Source: CDM Smith, 2018
Prepared by: CDM Smith, October 2020

LAX Airfield and Terminal Modernization Project	Regional Location	Figure **2-2**

2.2.2 Local Setting and Land Uses

The proposed Project improvement sites (hereafter referred to as the "Project improvement sites" or, collectively, the "Project site") are located within the northern and eastern portions of LAX (**Figure 2-3**). These sites consist of highly-developed land within and adjacent to a busy international airport. The land use setting around the Project improvement sites is characterized by airport operations with commercial uses along Sepulveda Boulevard and Century Boulevard. Land uses along 96th Street, 98th Street, and Vicksburg Avenue include a Los Angeles Community College District property,[1] vehicle parking (surface and structured parking), hotels, and an office building. West of the Project site (i.e., west of the western end of the airfield improvements) are Pershing Drive and the adjacent Los Angeles/El Segundo Dunes, a designated Ecologically Sensitive Habitat Area, and beyond the Dunes is the Pacific Ocean.

The proposed airfield improvements are situated within a portion of the airport that includes paved airfield areas, airfield access roadways, remote gates, and other aviation-related uses, such as maintenance facilities and fuel storage facilities. The Concourse 0 site is currently occupied by LAX-it, a temporary passenger pickup area for taxis and transportation network companies (TNCs) like Uber and Lyft.[2] The site also houses a groundwater remediation system and associated monitoring wells and equipment to address past contamination beneath the site. The Terminal 9 site encompasses existing cargo and maintenance facilities, the LAX Records Retention Building, and an American Eagle commuter terminal. The proposed landside improvements would be located in proximity to several hotels (Hyatt Regency Los Angeles, H Hotel/Homewood Suites, and Courtyard by Marriott), an office building, surface and structured parking facilities, and the Los Angeles Community College District property. Also within the vicinity of the Project site is the entrance to LAX, located at World Way and Sepulveda Boulevard.

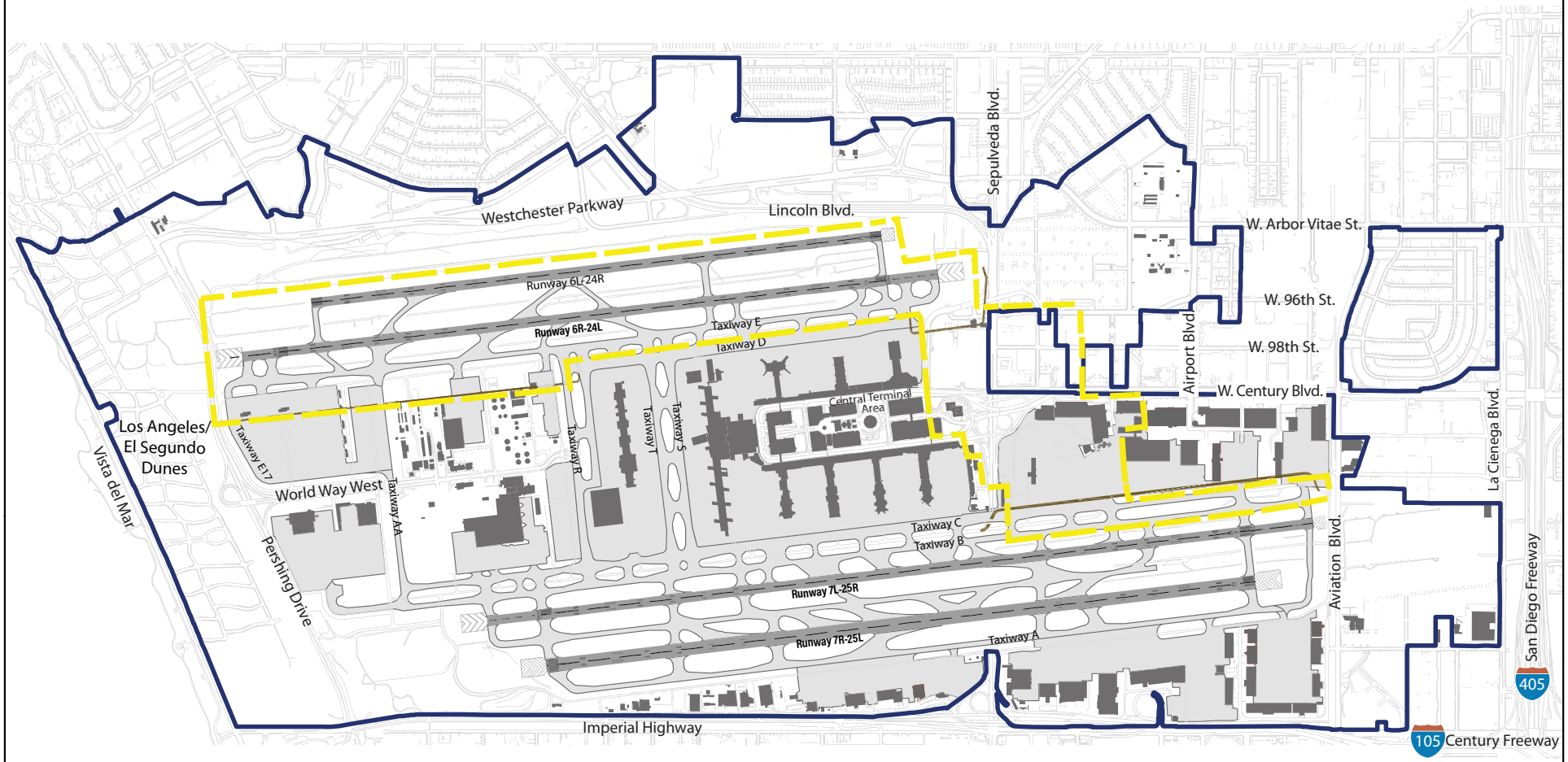
2.3 Project Objectives

2.3.1 Background

Over the past several decades, LAWA has continued to provide modernization-related improvements at LAX that enhance the safety and operational management of the airport, improve passenger quality-of-service, and serve to accommodate projected future growth. The following describes the background of, and need for, the improvements proposed as part of the LAX Airfield and Terminal Modernization Project, as related to objectives presented later in this section. The proposed improvements referred to in this section are illustrated in **Figure 2-4**.

[1] The Los Angeles Community College District property is improved with two airplane hangars that West Los Angeles College currently uses for the warehousing of movie set props and for periodic instruction to support its Film/Television Production Crafts program.

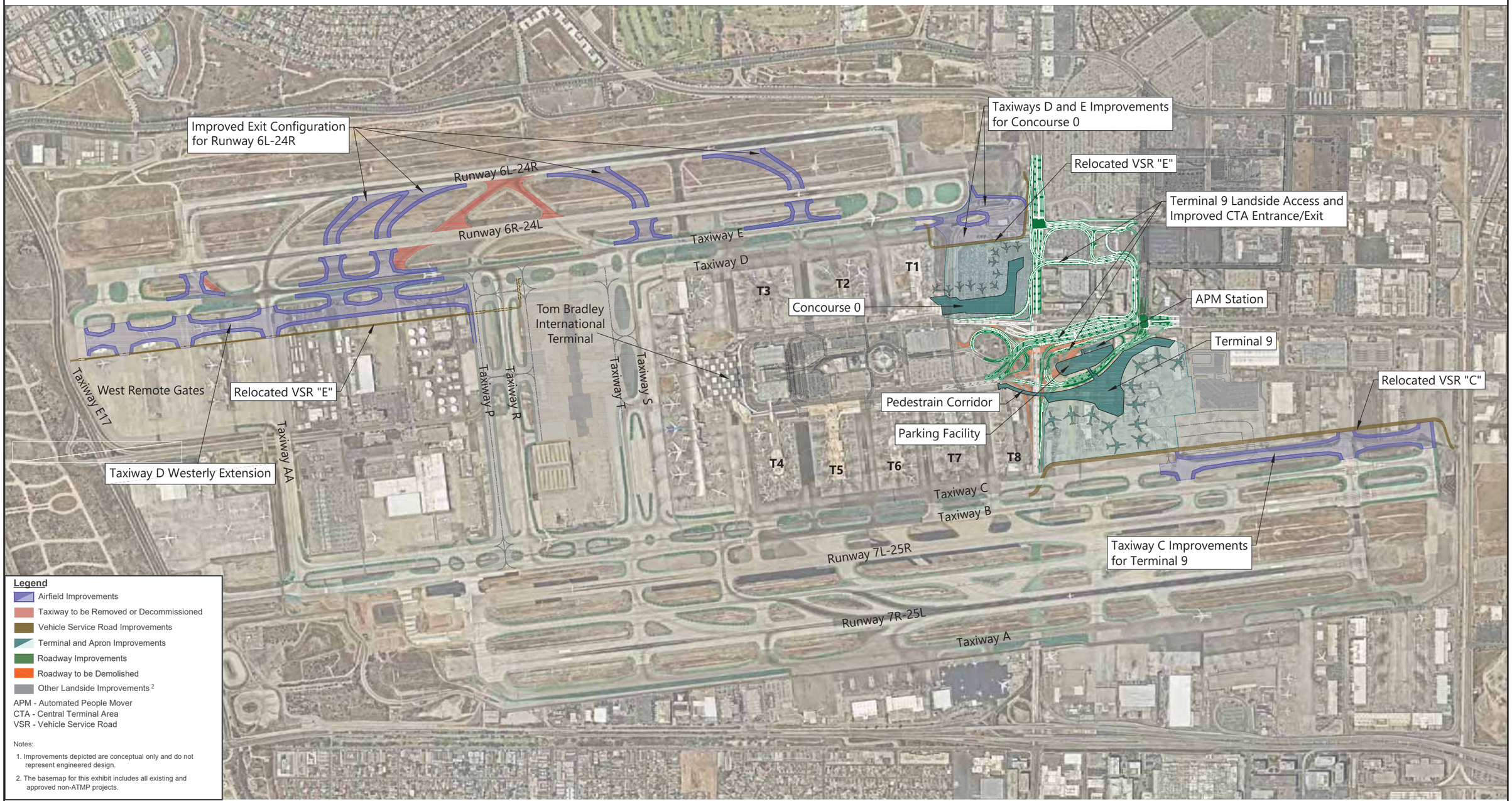
[2] LAX-it provides an auxiliary curb that reduces traffic congestion in the CTA by providing an alternative area for passenger pick-up during construction of the LAX Landside Access Modernization Program.



Sources: Ricondo & Associates, Geographic World Map, ESRI Database, 2018
Prepared by: CDM Smith, October 2020

LAX Airfield and Terminal Modernization Project	Project Location	Figure 2-3

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Source: Ricondo & Associates, Inc., 2019
Prepared by: CDM Smith, October 2020

LAX Airfield and Terminal Modernization Project

LAX Airfield and Terminal Modernization Project Elements

Figure
2-4

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2.3.1.1 Background Related to Proposed Improvements

2.3.1.1.1 Airfield Improvements

Taxiway D Westerly Extension

As shown in Figure 2-4, the existing taxiway system in the north airfield includes Taxiway E, which is immediately south of, and parallel to, Runway 6R-24L and extends along the full length of the runway; and Taxiway D, which is south of Taxiway E and is also parallel to Runway 6R-24L, but only extends along the eastern two-thirds of the runway. Given the relationship between the two runways in the north airfield and existing Taxiways D and E, arriving and departing aircraft that are taxiing in an east-west direction are limited to a single taxiway (Taxiway E) while in the western portion of the airfield, which hinders the efficient movement of aircraft, particularly during peak times of aircraft activity. As shown in **Figure 2-5**, the airfield improvements proposed as part of the LAX Airfield and Terminal Modernization Project include the westerly extension of Taxiway D, which would improve the operational management of aircraft movements in the north airfield, particularly as related to large aircraft. The westerly extension of Taxiway D would be designed to FAA design standards for Airplane Design Group (ADG)[3] VI aircraft, which would facilitate taxiing operations of large aircraft in the north airfield.

Runway 6L-24R Exits

Aircraft arriving at LAX typically land on the outboard runways, while departing aircraft typically use the inboard runways. As such, aircraft arriving on the outboard runway must cross the inboard runway in order to reach their gate. Presently there are two exits from Runway 6L-24R that cross the inboard runway (Runway 6R-24L) in areas defined as "high-energy zones," which is the portion of a runway where departing aircraft are still on the ground and moving at a high speed before lifting into the air and, therefore, should be avoided as a crossing point for taxiing aircraft.[4] Additionally, the two exits from Runway 6L-24R intersect with Runway 6R-24L at acute angles, which limits a pilot's visibility to look down Runway 6R-24L for any departing aircraft. **Figure 2-6** shows the relationship between the existing Runway 6L-24R exits Z and Y and the Runway 6R-24L high-energy zones, as well as the acute angle at which those exits cross Runway 6R-24L. Figure 2-6 also shows the runway exit improvements proposed by the Project to address those issues, as further described below in Section 2.4.1.2.

2.3.1.1.2 Terminal Improvements

The LAX Airfield and Terminal Modernization Project proposes the development of Concourse 0 and Terminal 9. These facilities would provide replacement gates for the West Remote Gates located at the west end of the airport that would be removed in conjunction with the westerly extension of Taxiway D. As further described below in Section 2.4.2.3, *Removal/Replacement of West Remote Gates,* 15 of the existing 18 West Remote Gates would be removed as part of the proposed Project. The addition of six to nine net new gates at Concourse 0 and 12 to 18 new gates at Terminal 9 would result in 18 to 27 new gates, a net increase of three to 12 gates. Section 2.4.2.3 below provides additional discussion regarding

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[3] An Airplane Design Group is a grouping of airplanes based on wingspan or tail height. Airplanes are grouped into six groups, ranging from ADG I to ADG VI. At LAX, most aircraft range from ADG III to ADG VI. ADG III aircraft include the Boeing 737 and Airbus A320, ADG IV aircraft include the Boeing 757 and 767 and the Airbus A300, ADG V aircraft include the Boeing 777 and Airbus A340, and ADG VI aircraft include the Airbus A380 and the Boeing 747-8.

[4] As discussed in Section 2.4.1.1, *Taxiway D Extension West,* below, high-energy zones are typically in the middle third of the runway. Per FAA Advisory Circular (AC) 150/5300-13A, the high-energy zone is "the portion of the runway where a pilot can least maneuver to avoid a collision." See U.S. Department of Transportation, Federal Aviation Administration, *Advisory Circular (AC) 150/5300-13A, Airport Design,* including errata, page 117, July 15, 2019. Available: https://www.faa.gov/airports/resources/advisory_circulars/index.cfm/go/document.current/documentNumber/150_5300-13.

the replacement of existing West Remote Gates with new gates at Concourse 0 and Terminal 9, and also discusses the use of gates by various types of aircraft.

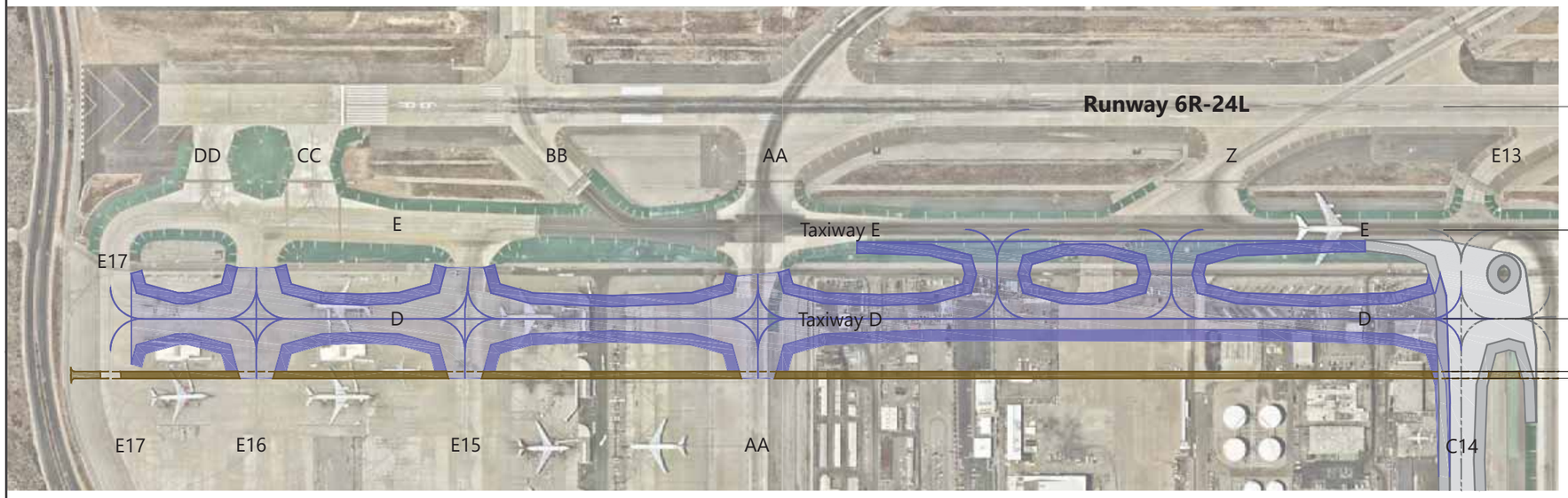
In addition to eliminating the inconvenience and inefficiency of busing passengers to and from the West Remote Gates, the development of Concourse 0 and Terminal 9 would provide new facilities with direct access to passenger processing capabilities, including for international travel, and a high-quality of passenger service, which the West Remote Gates do not provide. Also, locating the new replacement gates within a new concourse or terminal that is connected to other existing terminals at LAX would allow passengers with connecting flights to more easily and more quickly move between gates. More specifically, Concourse 0 would connect directly with Terminal 1, which, in turn, will connect with Terminal 2[5] as part of a future fully-linked terminal system within the CTA. Similarly, Terminal 9 would connect with Terminal 8 via the proposed pedestrian corridor over Sepulveda Boulevard. Terminal 8 currently connects directly with Terminal 7 as part of a connected terminal system on the south side of the CTA (i.e., a continuous passenger corridor between Terminal 8 and the Tom Bradley International Terminal). The complementary relationship between Concourse 0 and Terminal 9 to existing adjacent terminals within the CTA, as opposed to the disconnected isolated nature of the West Remote Gates, is illustrated in Figure 2-4.

2.3.1.1.3 Landside Improvements

The proposed LAX Airfield and Terminal Modernization Project landside improvements include facilities associated with the development of the new Terminal 9, as well as refinements to landside improvements approved as part of the LAX Landside Access Modernization Program.[6] The proposed Project landside improvements would be integrated with the previously-approved LAX Landside Access Modernization Program elements and include refinements to certain aspects of the Program. The refinements would account for Terminal 9, which was not contemplated as part of the LAX Landside Access Modernization Program. The refinements would also provide for improved access and driver wayfinding to and from the CTA. The proposed access improvements would help keep airport-related traffic congestion and back-up off public streets, thereby facilitating the flow of non-airport traffic on main roadways near the main entrance to the CTA. More specifically, the proposed Project roadway system includes modifications to the LAX Landside Access Modernization Program Phase 2 roadway improvements proposed at, and just east of, the Sepulveda Boulevard/Century Boulevard intersection, including:

[5] Ultimately, all of the terminals at LAX will be linked with secure connections. On the north side of the CTA, Terminal 1 will connect with Terminal 2 when the Terminal 1.5 Project is completed in approximately December 2020. Future projects will connect Terminal 2 with Terminal 3, and will provide a secure connector between Terminal 3 and the Tom Bradley International Terminal.

[6] The LAX Landside Access Modernization Program, approved by the Los Angeles City Council in June 2017, consists of two phases. Phase 1, currently under construction, includes development of the APM operating system and fixed facilities, the Consolidated Rental Car Facility (CONRAC), the Intermodal Transportation Facility (ITF) West and ITF East, and a portion of roadway improvements. Phase 2 consists of the remainder of the roadway improvements, located near the entrance to the CTA at/near Sepulveda Boulevard and Century Boulevard. Additional description of the LAX Landside Access Modernization Program, including Phase 1 and Phase 2 roadway improvements, is provided in Chapter 2, *Description of the Proposed Project*, of the LAX Landside Access Modernization Program EIR available online at: https://www.lawa.org/en/connectinglax/automated-people-mover/documents.



Legend

- Proposed ATMP Airfield Improvements
- Proposed Vehicle Service Road Improvements
- Approved Airfield Improvements not part of ATMP

ADG - Airplane Design Group
FOMO - Fixed or Moveable Object
"E," "D," etc. - Taxiway Designations

Note:
1. Improvements depicted do not represent engineered design.

Source: Ricondo & Associates, Inc., 2018
Prepared by: CDM Smith, October 2020

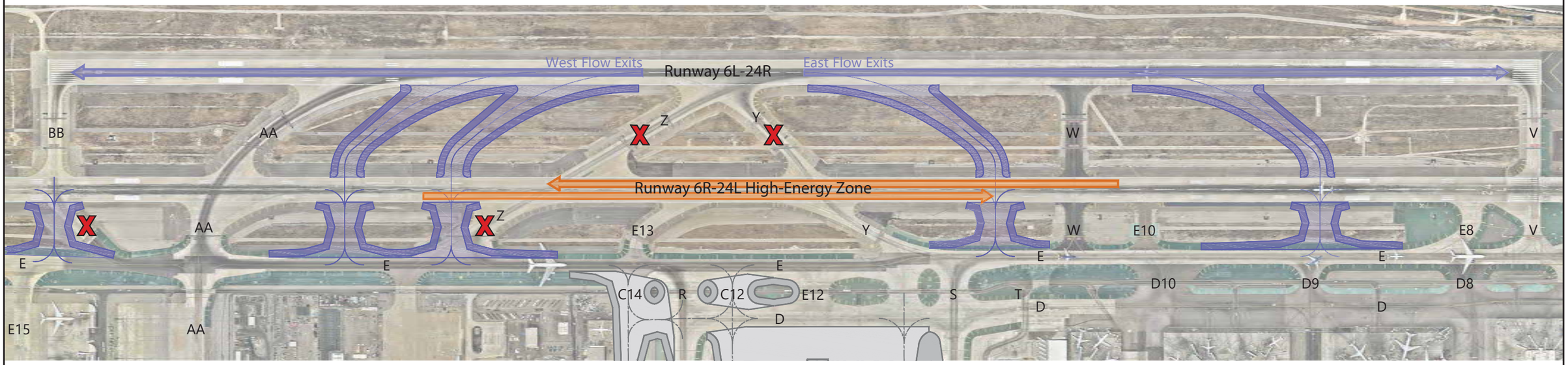
0 250 500 Feet
Scale

LAX Airfield and Terminal Modernization Project

Taxiway D Extension West

Figure
2-5

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Legend

- Proposed ATMP Airfield Improvement
- X Removed or Decommissioned Taxiway
- Runway 6R-24L High-Energy Zone (Approximate location of the West Flow and East Flow middle-third of the runway based on departure declared distances.)
- Approved Airfield Improvement not part of ATMP

Note:

1. Improvements depicted do not represent engineered design.

Source: Ricondo & Associates, Inc., 2018
Prepared by: CDM Smith, October 2020

0 300 600 Feet
Scale

LAX Airfield and Terminal Modernization Project

Runway 6L-24R Exits

Figure **2-6**

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- The addition of new roads, integrated into the LAX Landside Access Modernization Program Phase 2 roadway system, that would provide access to the arrivals level and the departures level of Terminal 9, as well as access to the Terminal 9 parking facility
- Roadway improvements that would shift the concentration of airport-related traffic movements away from the Sepulveda Boulevard/Century Boulevard/CTA interchange area, and towards the northeast, which would serve to reduce airport-related traffic congestion along Sepulveda Boulevard, especially near Lincoln Boulevard and near the Sepulveda Tunnel
- A roadway system configuration that would better centralize the entrance to the CTA, thereby simplifying and facilitating driver wayfinding
- Roadway segments dedicated to airport-related traffic such that airport-related traffic congestion at the CTA would not back-up onto nearby public streets, especially Sepulveda Boulevard

In addition, the development of Terminal 9 would also include a new pedestrian corridor over Sepulveda Boulevard and connection to Terminal 8 that would allow for convenient pedestrian and baggage movement between Terminal 9 and Terminal 8; a new parking facility near Terminal 9; a new APM station near Terminal 9 on the already-approved APM system (currently under construction as part of Phase 1 of the LAX Landside Access Modernization Program); and new roadways comprised of arrival and departure roadways at Terminal 9 and a roadway for the new parking facility.

2.3.1.2 Projected Future Growth at LAX

In conjunction with continued growth in population, housing, employment, and the economy within the Southern California region, growth in regional aviation activity will also occur, including at LAX. The following describes the draft regional aviation activity growth forecast recently completed by the Southern California Association of Governments (SCAG), which includes a passenger level forecast for LAX, as well as for other commercial airports in the region, and an aviation activity forecast specific to LAX that was completed for LAWA in 2019.

2.3.1.2.1 SCAG Regional Aviation Activity Forecast

As part of the 2020 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) for Southern California, also referred to as "Connect SoCal," SCAG completed a regional aviation activity forecast for the planning period of 2020 to 2045 to assist in the evaluation and planning of regional surface transportation system improvements, as may be affected by, or be related to, growth in regional aviation activity. That forecast is presented in the Aviation and Airport Ground Access Technical Report[7] of the Connect SoCal plan adopted by SCAG in September 2020.[8]

For the 2020-2045 regional passenger demand forecast, SCAG used the 2017 regional passenger activity level at the seven commercial service airports in the SCAG region of 110.17 million annual passengers (MAP) for the base year and the FAA 2018 Terminal Area Forecast projected annual growth rate of 2.1 percent to estimate the regional passenger level in 2045. In order to ensure that the overall regional forecast number was consistent with the planning efforts of the individual airports, SCAG Aviation Program staff worked with the region's airports, including LAX, to incorporate individual airport

[7] Southern California Association of Governments, *Connect SoCal Technical Report: Transportation System - Aviation and Airport Ground Access*, adopted September 3, 2020. Available: https://www.connectsocal.org/Documents/Adopted/0903f ConnectSoCal_Aviation-And-Airport-Ground-Access.pdf.

[8] Southern California Association of Governments, *Connect SoCal: The 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy of the Southern California Association of Governments*, adopted September 3, 2020. Available: https://www.connectsocal.org/Documents/Adopted/0903fConnectSoCal-Plan.pdf.

forecasts.[9] **Table 2-1** presents the SCAG regional passenger forecast for 2045, as projected to occur at each of the seven major commercial airports in the Southern California region and the five key reliever airports in the region.

The SCAG forecast presented in Table 2-1 indicates that passenger activity at LAX will grow from 84.56 MAP in 2017 to 127 MAP in 2045.

Table 2-1
SCAG Regional Airport Passenger Forecast for 2020-2045 RTP/SCS

Airport	2017 (Base Year) Actual		2045 (Horizon Year) Projection	
	MAP	% of Total	MAP	% of Total
Major Commercial Airports				
Hollywood Burbank Airport (BUR)	4.74	4.30%	9	4.57%
Imperial County Airport (IPL)	0.012	0.01%	0.3	0.15%
Long Beach Airport (LGB)	3.783	3.43%	5.5	2.79%
Los Angeles International Airport (LAX)	84.56	76.75%	127	64.42%
Ontario International Airport (ONT)	4.552	4.13%	33	16.74%
Palm Springs International Airport (PSP)	2.1	1.91%	5	2.54%
Santa Ana John Wayne/Orange County Airport (SNA)	10.423	9.46%	12.5	6.34%
Reliever Airports				
Oxnard Airport (OXR)	0	0.00%	0.3	0.15%
Palmdale Regional Airport (USAF Plant 42) (PMD)	0	0.00%	1.82	0.92%
March Air Reserve Base (RIV)	0	0.00%	0.61	0.31%
San Bernardino International Airport (SBD)	0	0.00%	1.81	0.92%
Southern California Logistics Airport (VCV)	0	0.00%	0.3	0.15%
Total	**110.17**	**100.00%**	**197.14**	**100.00%**

Source: Southern California Association of Governments, *Connect SoCal Technical Report: Transportation System - Aviation and Airport Ground Access*, adopted September 3, 2020. Available: https://www.connectsocal.org/Documents/Adopted/0903fConnectSoCal_Aviation-And-Airport-Ground-Access.pdf.

As further described below in the discussion of the aviation forecast specific to LAX, future growth in aircraft operations at LAX is anticipated to be constrained by the operational limitations of LAX's four-runway airfield system; in turn, those operational constraints would also constrain future passenger growth at LAX. As indicated in Table 2-1, SCAG projects that LAX's share of future passenger activity levels at commercial airports within the region will decrease by over 12 percent compared to base year (2017) conditions, reflecting the assumption that the constrained airfield system at LAX will result in a shift of some of the future demand to other airports in the region.

In addition to the regional aviation forecast developed by SCAG, which included LAX along with other commercial airports in the region for the 2020 RTP/SCS updates, LAWA developed a more detailed forecast for LAX for use in the planning and evaluation of the LAX Airfield and Terminal Modernization Project. That aviation forecast is described below.

[9] Southern California Association of Governments, *Connect SoCal: The 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy of the Southern California Association of Governments*, page 22, adopted September 3, 2020. Available: https://www.connectsocal.org/Documents/Adopted/0903fConnectSoCal-Plan.pdf.

2.3.1.2.2 LAX Aviation Activity Forecast

Forecasts of annual aircraft operations and passenger activity at LAX were developed in 2019 on behalf of LAWA to support the planning efforts for the LAX Airfield and Terminal Modernization Project facilities and are documented in **Appendix B.1** of this EIR. The LAX annual activity forecasts were used to derive Design Day Flight Schedules (DDFSs), which served as the basis for the technical analyses conducted to evaluate the operational characteristics of the Project including impacts to airfield operations.

Annual activity forecasts were developed for passengers and their associated aircraft operations, which are referred to as scheduled passenger operations. Annual activity forecasts were also developed for unscheduled operations, which comprise all-cargo, other air taxi, general aviation (GA), and military aircraft operations. Similar to the SCAG aviation forecast described above, the LAX aviation activity forecast developed for LAWA projected future passenger levels out to a horizon year of 2045. Although the forecast for LAWA estimated passenger levels at LAX for each year between 2018 and 2045, the SCAG forecast projected future passenger levels for only 2045; both forecasts had essentially the same projection for LAX in 2045, with SCAG's projection being 127 MAP and LAWA's projection being 127.9 MAP.

The passenger and operation forecasts developed for the proposed Project represent an estimate of future activity levels at LAX; however, many factors affect aviation demand, such as international, national, and local economic activity; geopolitical considerations; and cost of aviation fuel. Therefore, actual activity may vary from the forecasts, as further discussed in **Appendix B.1**.

A socioeconomic regression analysis that correlated origin and destination (O&D) passengers (i.e., those beginning or ending their trip in the Los Angeles Basin) to socioeconomic factors, such as population, employment, and per capita personal income, was selected as the forecasting method to estimate the annual growth rates for regional passengers and scheduled passenger operations. The use of a regression analysis to forecast passenger activity levels is consistent with industry standards for complex airports such as LAX and follows FAA guidance on forecasting methods.[10]

Based on the annual activity forecast and regression analysis results, passenger activity at LAX is forecasted to increase from 86.1 MAP in fiscal year (FY) 2018, the baseline year for most of the EIR's environmental analysis, to 110.8 MAP in FY 2028, the horizon year assumed for buildout of the proposed Project, (resulting in a compounded annual growth rate [CAGR] of 2.6. percent), while total annual aircraft operations are forecasted to increase from 715,000 annual operations in FY 2018 to 800,000 annual operations in FY 2028 (resulting in a CAGR of 1.1. percent).

The FY 2018 through FY 2028 period considered in this EIR is a subset of the overall forecast timeframe (FY 2018 through FY 2045) documented in **Appendix B.1** of this EIR. As further discussed in **Appendix B.1**, the forecasting process identified two forecast scenarios: an unconstrained activity forecast scenario (in which no existing or future operational or regulatory constraints were applied that would limit the ability of LAX to accommodate the projected demand for air travel); and a constrained forecast demand scenario (which was developed based on anticipated slowdown in the projected growth rate of aircraft operations as a result of future airfield congestion and delays). The forecast results for FY 2028 are identical under both scenarios, as documented in **Appendix B.1** of this EIR.[11] Thus, airfield congestion is not projected to be a constraint on growth until after 2028. For this reason, through 2028, the

[10] U.S. Department of Transportation, Federal Aviation Administration, *Forecasting Aviation Activity by Airport*, April 2001, p. 11. Available: https://www.faa.gov/airports/planning_capacity/.

[11] The FY 2045 annual passenger forecast results of the constrained forecast demand scenario are presented in **Appendix B.1** of this EIR are consistent with the SCAG Regional Aviation Activity Forecast discussed above (127.9 MAP and 127.0 MAP, respectively).

unconstrained and constrained forecasts are the same; in 2029 and thereafter, however, airport congestion is expected to constrain growth, and the unconstrained and constrained forecasts differ.

2.3.2 Objectives

Section 15124(b) of the State CEQA Guidelines states that the Project Description shall contain "[a] statement of the objectives sought by the proposed project." In addition, Section 15124(b) of the State CEQA Guidelines further states, "[t]he statement of objectives should include the underlying purpose of the project and may discuss the project benefits."

2.3.2.1 Underlying Purpose of the Project

The LAX Airfield and Terminal Modernization Project would support the ongoing modernization of LAX, to provide excellent passenger service, to support the economic growth and prosperity of the Los Angeles region, and to work closely with neighboring communities to reduce airport-related impacts. The proposed Project would support the ongoing modernization of LAX by enhancing the safety and operational management of the airfield, particularly as related to runway exits as further described below in Section 2.4.1.2; providing a new concourse and terminal to improve the quality of the passenger experience and efficiency of passenger processing; and improving the roadway system to better route airport-related traffic away from the public roads that serve the community. These improvements would help LAX to prepare early for the continued aviation growth that is projected by LAWA, SCAG, and the FAA to occur at LAX over the next several decades. Additionally, the nature and timing of improvements included in the proposed Project are integral to Los Angeles' plans to host the 2028 Olympic and Paralympic Games, with LAX serving as the main portal for athletes, dignitaries, and visitors from around the world.

2.3.2.2 Specific Objectives of the Project

In light of the underlying purpose of the LAX Airfield and Terminal Modernization Project, the Project objectives include the following:

- Airfield Improvements – Enhance the safety and operational management of the LAX airfield while working within the limits of the existing 4-runway system (i.e., do not add or relocate runways). Specifically, the proposed airfield improvements seek to:
  - Enhance safety of the north airfield complex
  - Reconfigure north airfield taxiway and runway exits and intersections to meet current FAA design standards
  - Maintain or enhance airfield operational management
  - Provide additional flexibility for management of aircraft movements on the airfield
- Terminal Improvements – Provide for new modern, spacious, and efficient terminal facilities that support the ability to accommodate the projected future growth in passenger levels at LAX and do so in a manner that offers high-quality passenger service and operational flexibility. Specifically, the proposed terminal improvements seek to:
  - Improve passenger experience, increase airlines' efficiency, and reduce busing activity on the airfield through the removal and replacement of most of the West Remote Gates and the elimination of the associated busing of passengers
  - Improve international and domestic passenger processing capabilities
  - Improve immigration and customs processes for international passengers arriving at LAX

- Provide additional connections to the previously-approved APM system currently under construction
- Provide connections to adjacent terminals that will allow passengers to move between terminals without having to go back through security screening

- Roadway System Improvements – In conjunction with providing landside (vehicle) access to the proposed new Terminal 9, develop a comprehensive network of roadway system improvements that will help separate and remove airport-related traffic from the local roadway system. Specifically, the proposed roadway system improvements seek to:
  - Reduce airport traffic back-ups onto public streets and surrounding neighborhoods, including, but not limited to, existing airport-related traffic congestion on Sepulveda Boulevard, especially near the entrance to the tunnel
  - Integrate the proposed roadway system improvements, including landside access to Terminal 9, with the approved LAX Landside Access Modernization Program improvements
  - Simplify driver wayfinding, reduce decision points, and provide more distance for maneuvering
  - Reduce concentration of traffic and roadway facilities at and around the Century Boulevard/Sepulveda Boulevard/CTA interchange area
  - Support access to the Intermodal Transportation Facility (ITF) West that is linked with the APM system, which will encourage use of those facilities and reduce vehicle miles traveled (VMT)
  - Develop an APM station to provide access to the future APM system for passengers and employees of the proposed Terminal 9, as well as other LAX passengers and employees (e.g., flight crews) that utilize hotel facilities nearby, which can help to reduce VMT
- Additional Objectives
  - Generate business development, employment opportunities, and economic activity that draws from the local workforce and benefits the communities located around LAX and the City of Los Angeles
  - Maintain airport operations during construction
  - Implement airport improvements in a sustainable manner that considers the total cost of ownership, including financial, environmental, and social costs
  - Complete construction of the proposed Project prior to the 2028 Olympic and Paralympic Games to be held in Los Angeles

2.4 Project Elements

The main elements of the proposed Project include airfield improvements, concourse and terminal improvements, and landside roadway improvements. Figure 2-1 shows a general overview of the proposed Project. Figure 2-4 and **Figure 2-7** delineate the nature and locations of the specific improvements, and the following sections provide details regarding each of the main elements. The associated enabling projects for each of the main elements are identified and discussed in Section 2.5, *Enabling Projects*, below.

The proposed airfield, terminal, and landside elements described herein are currently at a preliminary design level of planning, and are subject to refinement in conjunction with more detailed engineering and design that occurs during the normal course of project implementation, subject to receipt of applicable project approvals. The information presented in this section regarding the characteristics of the various

project elements provides a sufficient basis for evaluating the potential environmental impacts of the proposed Project.

2.4.1 Airfield Elements

The improvements associated with the airfield elements of the proposed Project include the westerly extension of Taxiway D in the western portion of the north airfield, and the reconfiguration of runway exits from Runway 6L-24R in the north airfield. Details of these improvements are provided below. (Additional airfield improvements would be required to accommodate the terminal improvements. These airfield improvements are described in Section 2.4.2, *Terminal Area Elements*.)

2.4.1.1 Taxiway D Extension West

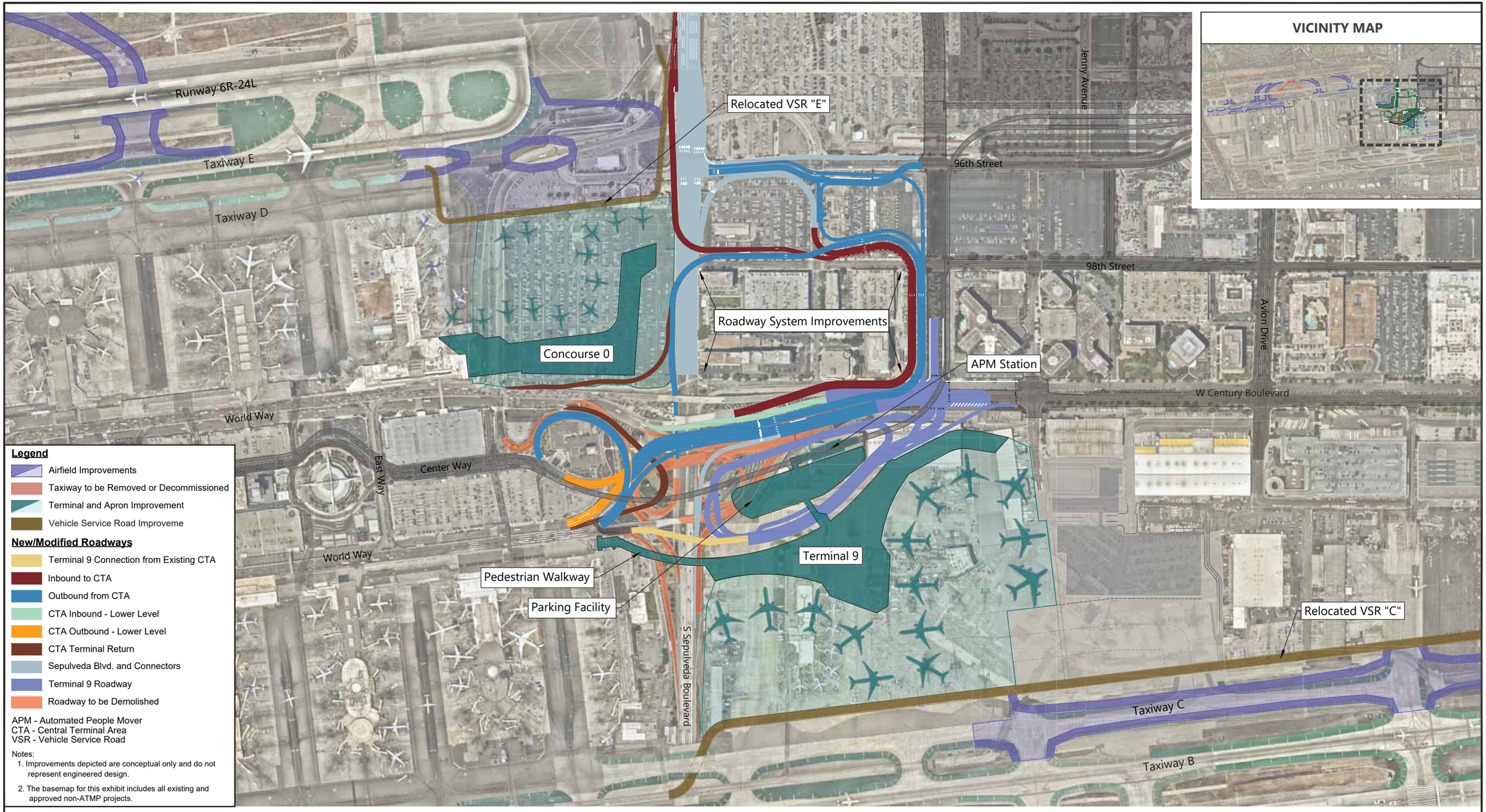
The north airfield has two runways: Runway 6L-24R, which is the outboard runway (i.e., farthest from the CTA) and Runway 6R-24L, which is the inboard runway (i.e., closest to the CTA). There are two parallel taxiways south of Runway 6R-24L, including Taxiway E, which is immediately south of Runway 6R-24L, and Taxiway D, which is south of Taxiway E. Taxiway E extends the full length of the Runway 6R-24L; however, Taxiway D only extends along the eastern two-thirds of Runway 6R-24L. As such, arriving and departing aircraft on the north airfield that are taxiing in an east-west direction are limited to a single taxiway (Taxiway E) while in the western portion of the airfield, which hinders the orderly movement of aircraft, particularly during peak times of aircraft activity.

As shown on Figure 2-5, the proposed Taxiway D Extension West includes an extension of Taxiway D from Taxiway P to Taxiway E17, and the associated relocation of the westerly portion of Vehicle Service Road E. FAA design standards for airport runways and taxiways take into consideration the size of aircraft that may be operating on the runway or taxiway relative to providing adequate distance from other aircraft and other movement activity occurring nearby. Aircraft size is defined by the FAA in terms of Airplane Design Group (ADG). Examples of ADG sizes of aircraft that are common to LAX include the Boeing 737 and Airbus A320, which are ADG III; the Boeing 757 and 767, which are ADG IV; the Boeing 747, 777, and 787, which are ADG V; and the Airbus A380, which is ADG VI. The proposed westerly extension of Taxiway D is designed with ADG VI separation from Taxiway E, and the accompanying new vehicle service road proposed south of the Taxiway D extension is designed at ADG VI separation from Taxiway D. The location and design of the proposed taxiway extension would improve airfield operational management by segregating eastbound and westbound taxiing aircraft on Taxiways D and E. With the proposed improvements, ADG VI aircraft could use the Taxiway D extension instead of Taxiway E to avoid operational restrictions during ADG VI arrival and departure operations on Runway 6R-24L.

As further described in Section 2.5, *Enabling Projects*, below, the extension of Taxiway D to the west would require the removal of nine existing West Remote Gates. As further described below in Section 2.4.2.3, an additional six West Remote Gates would be decommissioned (i.e., would no longer be used for regularly-scheduled commercial flights) as part of the proposed Project, even though those six gates are not within the area required for the extension of Taxiway D. The 15 West Remote Gates that would be decommissioned as part of the proposed Project would be replaced by new passenger gates and holding areas associated with development of Concourse 0 and Terminal 9, as discussed in Section 2.4.2.3, *Removal/Replacement of West Remote Gates,* below.

2.4.1.2 Runway 6L-24R Exits

Aircraft arriving at LAX typically land on the outboard runways, while departing aircraft typically use the inboard runways. These practices reduce noise impacts on communities to the north and south of LAX (aircraft takeoffs are noisier than landings and, therefore, are directed to the inboard runways where they are farther away from the communities than would otherwise occur with use of the outboard runways).



Sources: Los Angeles World Airports, *Airport Layout Plan – Existing Layout Plan Sheet Working Draft, June 15, 2017* (Runway 6L-24R exit reconfiguration); Los Angeles International Airport, June 2017 (aerial photography); Ricondo & Associates, Inc., May 2018 (Concourse 0 and Terminal 9); CFWright Consulting, LLC, July 2020 (improved CTA entrance/exit); Los Angeles World Airports, July 2020 (LAX Landside Access Modernization Program)
Prepared by: CDM Smith, October 2020

LAX Airfield and Terminal Modernization Project

LAX Airfield and Terminal Modernization Project Landside Element Details

Figure
2-7

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As such, aircraft arriving on the outboard runway must cross the inboard runway in order to reach their gates. Presently there are two exits from Runway 6L-24R that cross the inboard runway (6R-24L) in areas defined as "high-energy zones," which is the portion of a runway where departing aircraft are still on the ground and moving at a high speed before lifting into the air. These high-energy zones are typically in the middle third of the runway. As explained in FAA Advisory Circular (AC) 150/5300-13A, the high-energy zone is "the portion of the runway where a pilot can least maneuver to avoid a collision."[12] Thus, removing or avoiding the placement of taxiway intersections in high-energy zones reduces the possibility of an accidental crossing occurring in the area where a departing aircraft is least able to take action to avoid a collision. By limiting runway crossings to the outer thirds of the runway, the portion of the runway where a pilot can least maneuver to avoid a collision is kept clear.

As shown on Figure 2-6, the proposed Project includes the construction of new acute-angled exits on Runway 6L-24R that would cross Runway 6R-24L outside the high-energy zones. The improvements include two new exits for West Flow conditions (i.e., for Runway 24R when aircraft are arriving in a westward direction, which is the majority of time at LAX) and two new exits for East Flow conditions (i.e., for Runway 6L when aircraft are arriving in an eastward direction). The construction of new exits that would cross outside the high-energy zones would be accompanied by the removal or decommissioning of the existing exits that cross the high-energy zones (i.e., existing Taxiways Y and Z). The new West Flow exits on Runway 24R would be located between Taxiways AA and the to-be-demolished Taxiway Z, and the new East Flow exits on Runway 6L would be located east and west of Taxiway W. In conjunction with the safety benefits of relocating runway exits outside of the high-energy zones, the new acute-angled exits would curve to provide crossings that are perpendicular to Runway 6R-24L, as opposed to the existing exits that cross Runway 6R-24L at an acute angle. Perpendicular crossings have safety benefits by providing pilots in arriving aircraft a better line of vision, allowing them to look down Runway 6R-24L for possible departing aircraft.

Overall, implementation of the new Runway 6L-24R exits would have the following effects on airfield safety and operational management:

- The Taxiway Z and Y runway crossings would be removed from the Runway 6R-24L high-energy zones
- The proposed runway exit geometry would facilitate pilot visibility (with standard angle [i.e., 90-degree] intersections) when crossing Runway 6R-24L
- The locations of the new acute-angled taxiways would better support the fleet operating at LAX (i.e., the additional exits would provide better opportunities for aircraft to exit after landing on Runway 6L-24R, as compared to current conditions where there are fewer exits and greater distances between those exits)
- The proximity of the West Flow exits to one another would provide operational flexibility and redundancy when exits are occupied during peak arrival or departure periods (i.e., the increase in the number of runway exits and the positioning of the new and relocated exits would provide the ability to hold more aircraft between the runways during peak arrival and departure periods)

With regard to runway safety systems in the north airfield, LAWA has installed runway status lights.[12a] Design and construction of the north airfield improvements described above would include integration with the existing runway status lights system, as required by the FAA.

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[12] U.S. Department of Transportation, Federal Aviation Administration, *Advisory Circular (AC) 150/5300-13A, Airport Design*, including errata, page 117, July 15, 2019. Available: http://www.faa.gov/airports/resources/advisory_circulars/index.cfm/go/document.current/documentNumber/150_5300-13.

[12a] Runway Status Lights are a fully automatic advisory system designed to reduce the number and severity of runway incursions and prevent runway accidents while not interfering with airport operations. The system is designed to be compatible with existing procedures and is comprised of Runway Entrance Lights (RELs) and Takeoff Hold Lights (THLs). Source: U.S. Department of Transportation, Federal Aviation Administration, *Runway Status Lights*. Available: https://www.faa.gov/air_traffic/technology/rwsl/, accessed October 21, 2020.

2.4.2 Terminal Area Elements

The proposed terminal area elements consist of the following:

- Construction of Concourse 0, which would be an easterly extension of existing Terminal 1
- Construction of Terminal 9, which would be a new passenger terminal located southeast of the Sepulveda Boulevard/Century Boulevard intersection
- Improvements and modifications to existing taxiways located near Concourse 0 and Terminal 9 that would facilitate aircraft access to and from the gates at those facilities

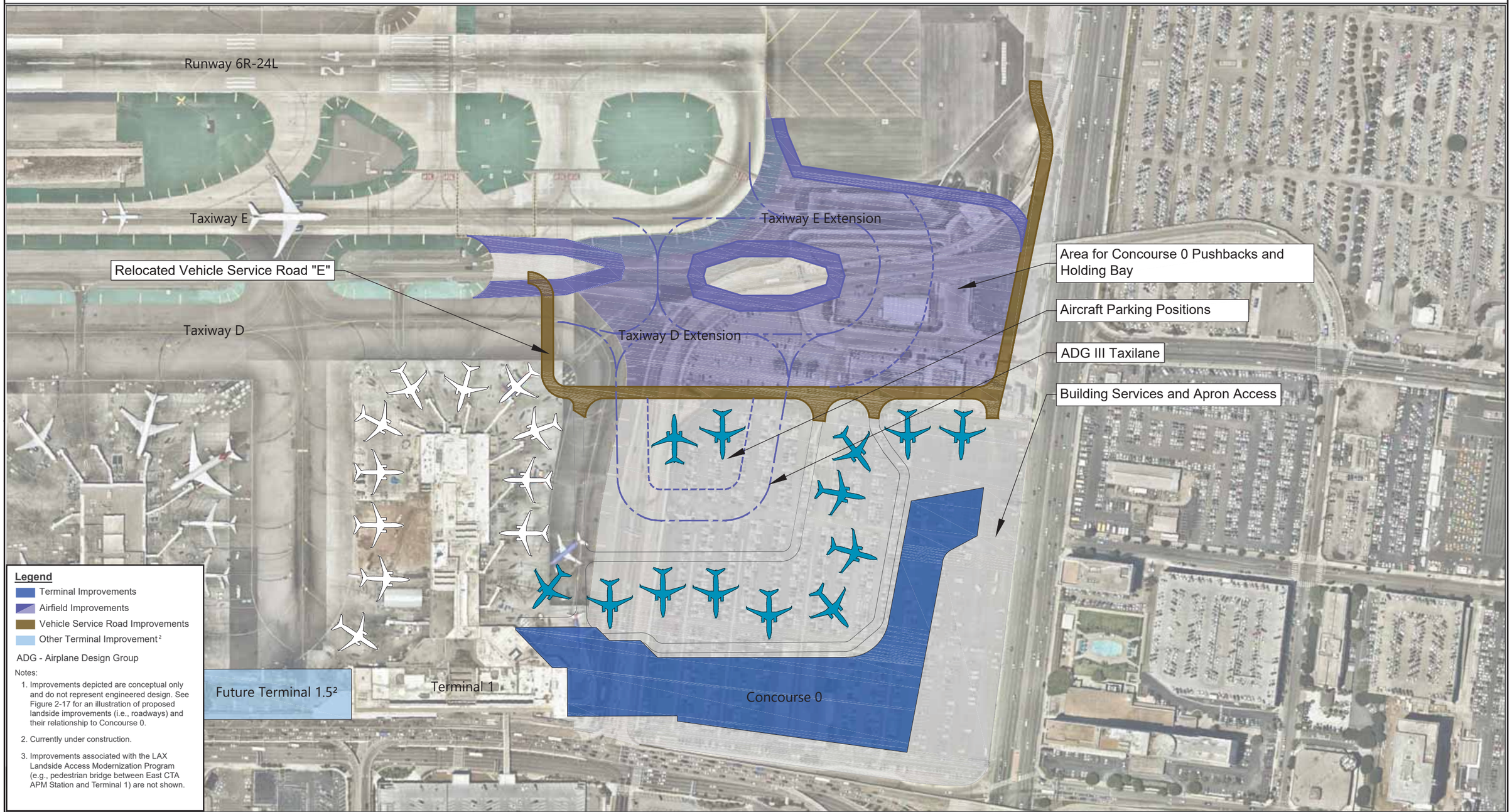
Development of Terminal 9 would include landside access improvements (i.e., arrival and departure curbs for drop-off and pick-up of passengers, a parking facility, an added station on the previously-approved LAX APM line, and improvements to nearby roadways), which are described later in this section under Landside Elements. No landside access is proposed for Concourse 0; instead, access to Concourse 0 would be provided via existing Terminal 1.

2.4.2.1 Concourse 0

As shown on **Figure 2-8**, Concourse 0 is planned as a concourse facility with up to 11 narrowbody aircraft gates that would attach to, and extend to the east of, Terminal 1. The two westernmost gates at Concourse 0 would replace the two easternmost existing gates at Terminal 1. The resulting net increase of up to nine new narrowbody gates, along with the new gates associated with Terminal 9, would serve to replace existing remote gates that would be eliminated by the proposed westerly extension of Taxiway D or otherwise decommissioned (see Section 2.4.2.3, *Removal/Replacement of West Remote Gates*, below). As further described below in Section 2.4.2.3, Concourse 0 could accommodate up to five widebody aircraft and three narrowbody aircraft, instead of 11 narrowbody aircraft, using the same gates and passenger boarding bridges available for 11 narrowbody aircraft; however, because the primary operator at Concourse 0 is expected to be Southwest Airlines, which currently only has narrowbody aircraft in its fleet, the primary use of the subject facility is anticipated to be for narrowbody aircraft.

Concourse 0 would consist of up to seven levels, including four levels for the proposed concourse/passenger operations and potentially three additional levels of office space that LAWA is considering as an option. There would be a total floor area of up to 745,000 square feet for concourse/passenger operations, and potentially up to an additional 318,000 square feet of office space used for administrative purposes. In accordance with Federal Aviation Regulation (FAR) Part 77, *Safe, Efficient Use and Preservation of the Navigable Airspace*, the total height of Concourse 0 would not penetrate the horizontal surface 150 feet above the established airport elevation.[13] (Part 77 surfaces are described in Section 2.4.3.2.) Concourse 0 and the potential office levels have been designed at a preliminary, conceptual level and the total building area requirement may be refined during more detailed project design development. To account for the possibility that such design refinements may lead to additional building floor area, and in order to provide a conservative impacts analysis that includes such additional area, a 20 percent increase in building area was assumed for the proposed concourse (i.e., 745,000 square feet plus 20 percent contingency is 894,000 square feet) and the potential option for office levels (i.e., 318,000 square feet plus 20 percent contingency is 381,600 square feet), for a total building area size of up to 1,275,600 square feet. Although the final design has not been determined, the preliminary design provides sufficient information to determine the maximum size of the total building area, and to provide information on the massing, scale, appearance, and proposed uses of the building.

[13] U.S. Department of Transportation, Federal Aviation Administration, *14 Code of Federal Regulations (CFR) Part 77, Safe, Efficient Use and Preservation of the Navigable Airspace*, July 21, 2010. Available: https://www.govinfo.gov/content/pkg/FR-2010-07-21/pdf/2010-17767.pdf.



Source: Ricondo & Associates, Inc., 2019
Prepared by: CDM Smith, October 2020

LAX Airfield and Terminal Modernization Project	Concourse 0 - Conceptual Site Plan	Figure **2-8**

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Figure 2-9 and **Figure 2-10** provide conceptual views of the proposed Concourse 0 from the landside and airside, respectively (the conceptual views do not include the potential office levels). The conceptual views provided in those figures are for illustrative purposes to show the basic siting, size, and mass of Concourse 0, and are not intended to represent the architectural style or exterior building materials treatment, as such features would be defined in conjunction with more detailed planning and design. **Figure 2-11** and **Figure 2-12** provide section views of Concourse 0 that illustrate passenger flows.

Concourse 0 would serve both domestic and international flights. International operations would be supported with sterile[14] circulation for international arrivals, a fully contained U.S. Customs and Border Protection (CBP) Federal Inspection Services (FIS) area, international baggage claim, and a sterile bus drop-off platform for passenger busing operations, if needed. Passengers arriving at or departing from Concourse 0 would process or transfer through Terminal 1 and/or the future Terminal 1.5.[15] There would be no curbside access at Concourse 0 (i.e., no drop-off or pick-up curb for passengers). Pedestrian access at Concourse 0 would be provided through Terminal 1 on both the arrivals level and the departures level and through a vertical circulation core (i.e., multi-level elevator/escalator/stairway system) at the interface between Concourse 0 and Terminal 1 that would connect to an APM station – specifically, the East CTA APM Station – via an elevated pedestrian walkway (see Figures 2-11 and 2-12). The subject APM station, as well as the associated vertical circulation core and elevated pedestrian walkway, were previously approved as part of the LAX Landside Access Modernization Program;[16] however, construction of the vertical circulation core and elevated pedestrian walkway would occur in conjunction with development of Concourse 0.

In conjunction with construction of the passenger building and aircraft gates, development of Concourse 0 would include construction of an aircraft parking apron, including two non-contact aircraft parking positions; the easterly extension of Taxiway D as an ADG V taxiway; the easterly extension of Taxiway E as an unrestricted ADG V/restricted ADG VI taxiway; and the relocation of the easternmost portion of Vehicle Service Road E. A paved area would be located at the eastern ends of Taxiways D and E that could be used for aircraft pushbacks for the northeastern gate at Concourse 0 and could also be used to temporarily hold departing aircraft waiting to access Runway 6R-24L for takeoff.

2.4.2.2 Terminal 9

As shown on **Figure 2-13**, Terminal 9 is planned as an international and domestic terminal facility with up to 12 to 18 gates and the capability to support ADG VI operations. The new gates associated with Terminal 9, along with the gates associated with Concourse 0, would serve to replace existing West Remote Gates that would be eliminated by the proposed westerly extension of Taxiway D or otherwise decommissioned (see Section 2.4.2.3, *Removal/Replacement of West Remote Gates*, below). The range of 12 to 18 gates is based on aircraft size, with Terminal 9 being able to accommodate up to 12 widebody aircraft or up to 18 narrowbody aircraft. Given that Terminal 9 would primarily serve international flights that tend to use widebody aircraft, the primary use of the subject facility is anticipated to be for widebody aircraft.

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[14] "Sterile" areas are circulation (i.e., corridors) or holding areas that are restricted to cleared passengers. Sterile areas may be secured with access control solutions that include automatic alarms, closed-circuit television (CCTV) cameras, staffed personnel, and directional signage. CBP maintains sterility to prevent mixing of cleared and uncleared passengers, as well as the potential for contraband exchange.

[15] Terminal 1.5 is a facility currently under construction west of Terminal 1 and east of Terminal 2. Terminal 1.5 will include passenger and baggage screening, ticketing, and baggage claim facilities in support of existing operations within Terminals 1 and 2; a secure passenger connection (i.e., enclosed/controlled corridor) between existing Terminals 1 and 2; and office and support space.

[16] City of Los Angeles, Los Angeles World Airports, *Final Environmental Impact Report for Los Angeles International Airport (LAX) Landside Access Modernization Program*, (SCH 2015021014), Section 2.4.1.2.2 - Stations, Pedestrian Walkways, and Vertical Circulation Cores, February 2017. Available: https://www.lawa.org/en/connectinglax/automated-people-mover/documents.

Terminal 9 would be a 1,178,000-square-foot, independently operating, four-level facility with a central passenger processing core, a concourse that extends to the west of the core, a concourse that extends to the east of the core, and a pedestrian connector to Terminal 8. All of the necessary passenger processing functions would be provided within Terminal 9. As with Concourse 0 described above, Terminal 9 has been designed at a preliminary, conceptual level and the total building area requirement may be refined during more detailed project design development. To account for the possibility that such design refinements may lead to additional building floor area, and to provide a conservative impacts analysis that includes such additional area, a 20 percent contingency was added to the building area, resulting in an assumed total building area of 1,413,600 square feet. This preliminary design provides sufficient information to determine the maximum size of the total building area, and to provide information on the massing, scale, appearance, and proposed uses of the building. In addition to the 1.4 million-square-foot terminal, the Terminal 9 improvements include development of a parking facility of up to 700,000 square feet.

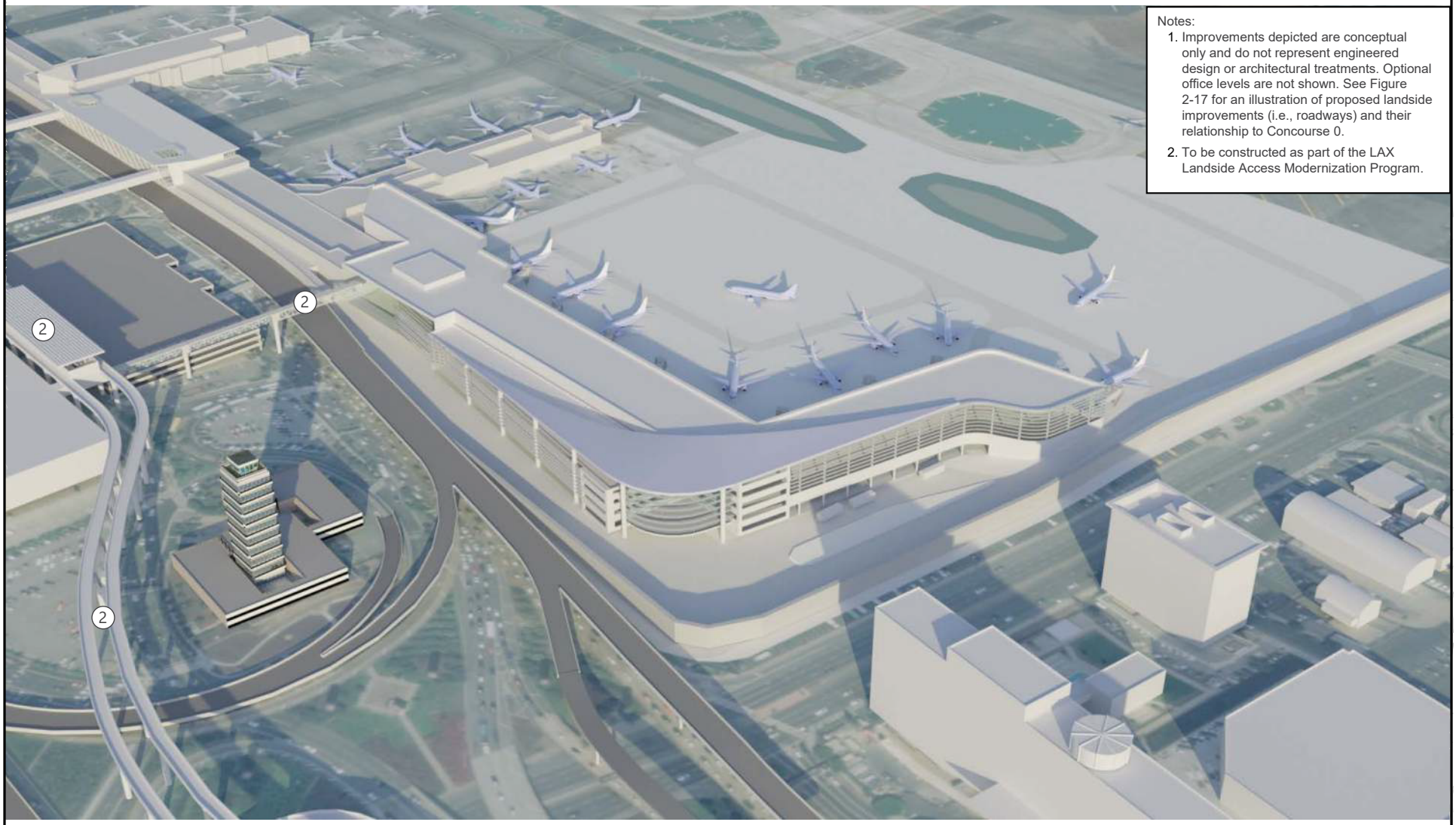
Figure 2-14 and **Figure 2-15** provide conceptual views of the proposed Terminal 9 from the landside and airside, respectively. The conceptual views provided in those figures are for illustrative purposes to show the basic siting, size, and mass of Terminal 9, and are not intended to represent the architectural style or exterior building materials treatment, as such features would be defined in conjunction with more detailed planning and design. In conjunction with development of these facilities, other related improvements would include construction of the Terminal 9 APM station (platform) and pedestrian corridors connecting the terminal, the APM station, and the parking facility, as well as construction of the pedestrian corridor over Sepulveda Boulevard between Terminal 9 and Terminal 8.

Figure 2-16 provides a section view of Terminal 9 that illustrates passenger flows. International operations would be supported by a fully contained CBP FIS area with international baggage claim.

Terminal 9 would serve both domestic and international flights. International operations would be supported with sterile circulation for international arrivals, a fully contained CBP FIS area, international baggage claim, and both a secure (domestic) and a sterile (international) bus curb for passenger busing operations, if needed. Development of the connector between Terminals 8 and 9 would require construction of a vertical circulation core at the westerly end of the connector, which would require some modifications within Terminal 8 at the interface with the new vertical circulation core (specifically, a portion of the face of Terminal 8 would be opened so that various interior levels of the vertical core can be connected with the respective interior levels of Terminal 8).

In addition to the passenger building, Terminal 9 would also include an aircraft parking apron and a taxilane connecting the terminal to the airfield. Other related airfield improvements that would support Terminal 9 include the relocation of Vehicle Service Road C and the relocation and easterly extension of Taxilane C from Taxiway C3 to Taxiway B1. The relocated vehicle service road would be designed at ADG VI separation from Taxiway C and the relocated/extended Taxilane C would be designed at ADG VI separation from Taxiway B.

Landside access to Terminal 9 would be provided by new roadway segments north of the terminal, construction of a nearby station on the previously-approved LAX APM and, as noted previously, construction of a pedestrian corridor over Sepulveda Boulevard that would connect Terminals 8 and 9. An elevated pedestrian walkway would link the APM station and the new terminal; access to a new parking facility would be provided by an elevated pedestrian walkway, a tunnel, or a combination of both. These improvements are further described below under Landside Elements.



Notes:

1. Improvements depicted are conceptual only and do not represent engineered design or architectural treatments. Optional office levels are not shown. See Figure 2-17 for an illustration of proposed landside improvements (i.e., roadways) and their relationship to Concourse 0.
2. To be constructed as part of the LAX Landside Access Modernization Program.

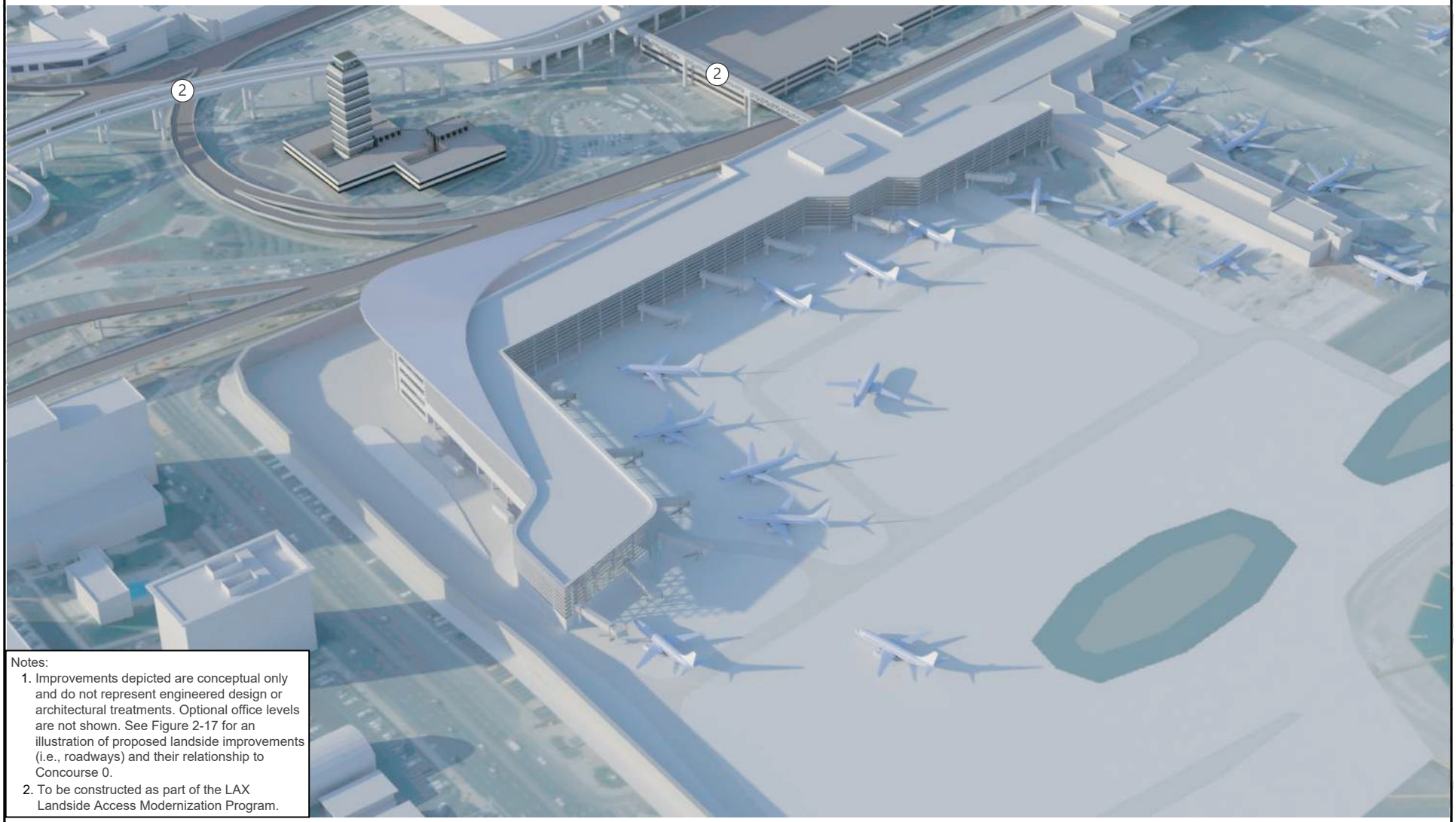
Source: Ricondo & Associates, Inc., 2019
Prepared by: CDM Smith, October 2020

Not to Scale

LAX Airfield and Terminal Modernization Project

Concourse 0 Conceptual View – Landside

Figure
2-9



Notes:
1. Improvements depicted are conceptual only and do not represent engineered design or architectural treatments. Optional office levels are not shown. See Figure 2-17 for an illustration of proposed landside improvements (i.e., roadways) and their relationship to Concourse 0.
2. To be constructed as part of the LAX Landside Access Modernization Program.

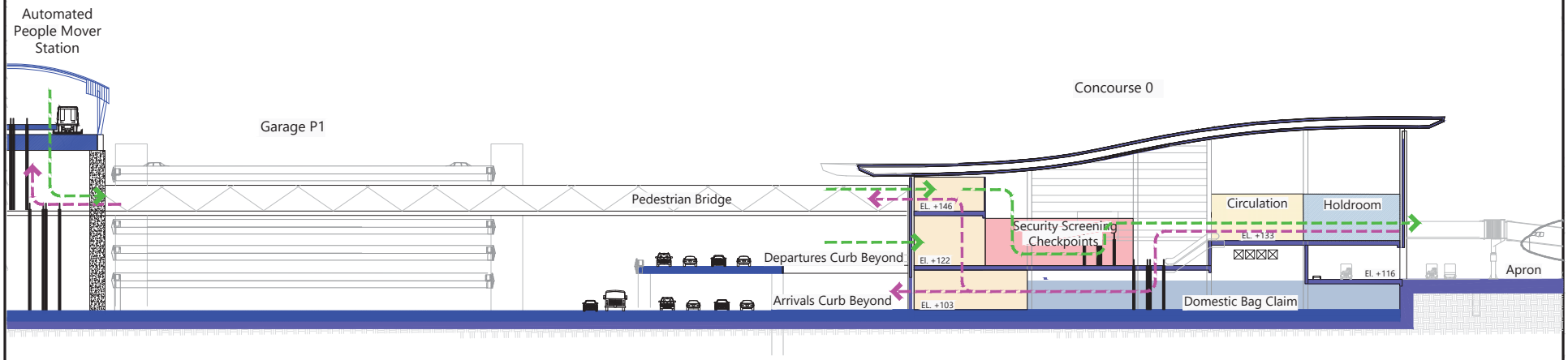
Source: Ricondo & Associates, Inc., 2019
Prepared by: CDM Smith, September 2020

Not to Scale

LAX Airfield and Terminal Modernization Project

Concourse 0 Conceptual View – Airside

Figure
2-10



Notes:
1. Improvements depicted are conceptual only and do not represent engineered design or architectural treatments.
2. To be constructed as part of the LAX Landside Access Modernization Program.

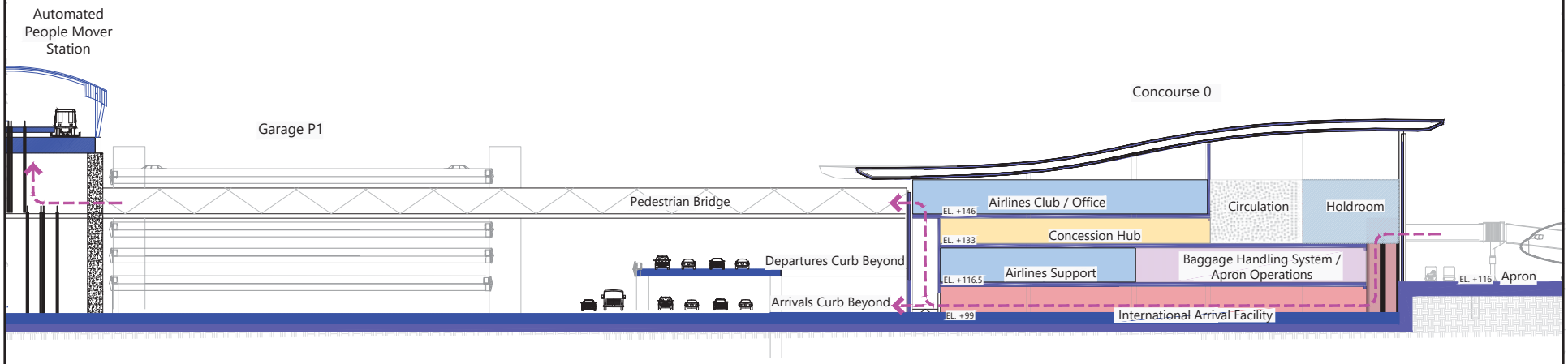
Source: Ricondo & Associates, Inc., 2019
Prepared by: CDM Smith, October 2020

Not to Scale

LAX Airfield and Terminal Modernization Project

Concourse 0 Passenger Flows - Departures and Domestic Arrivals

Figure
2-11



Notes:
1. Improvements depicted are conceptual only and do not represent engineered design or architectural treatments.
2. To be constructed as part of the LAX Landside Access Modernization Program.

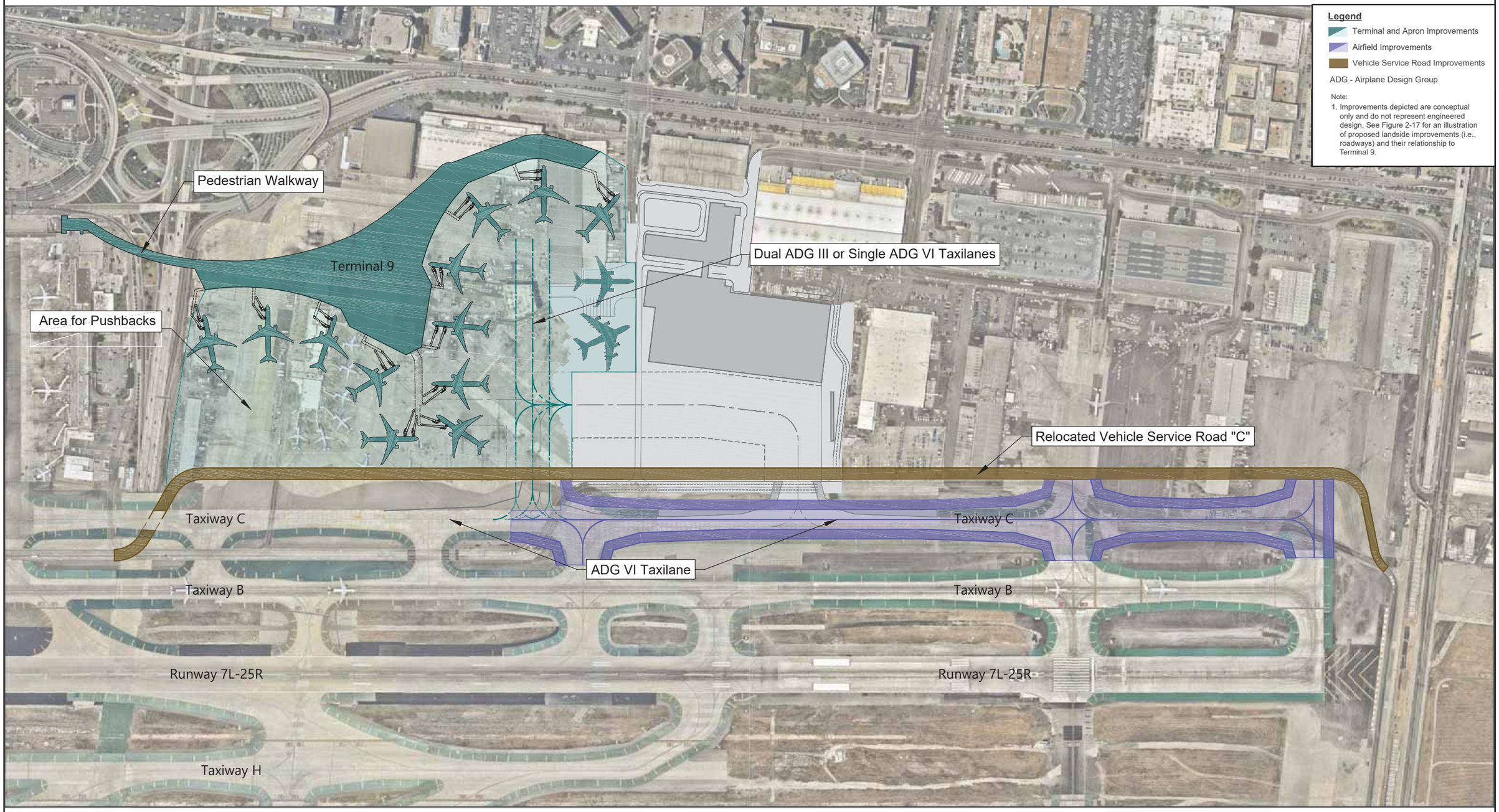
Source: Ricondo & Associates, Inc., 2019
Prepared by: CDM Smith, October 2020

Not to Scale

LAX Airfield and Terminal Modernization Project

Concourse 0 Passenger Flows - International Arrivals

Figure
2-12



Source: Ricondo & Associates, Inc., 2019
Prepared by: CDM Smith, October 2020

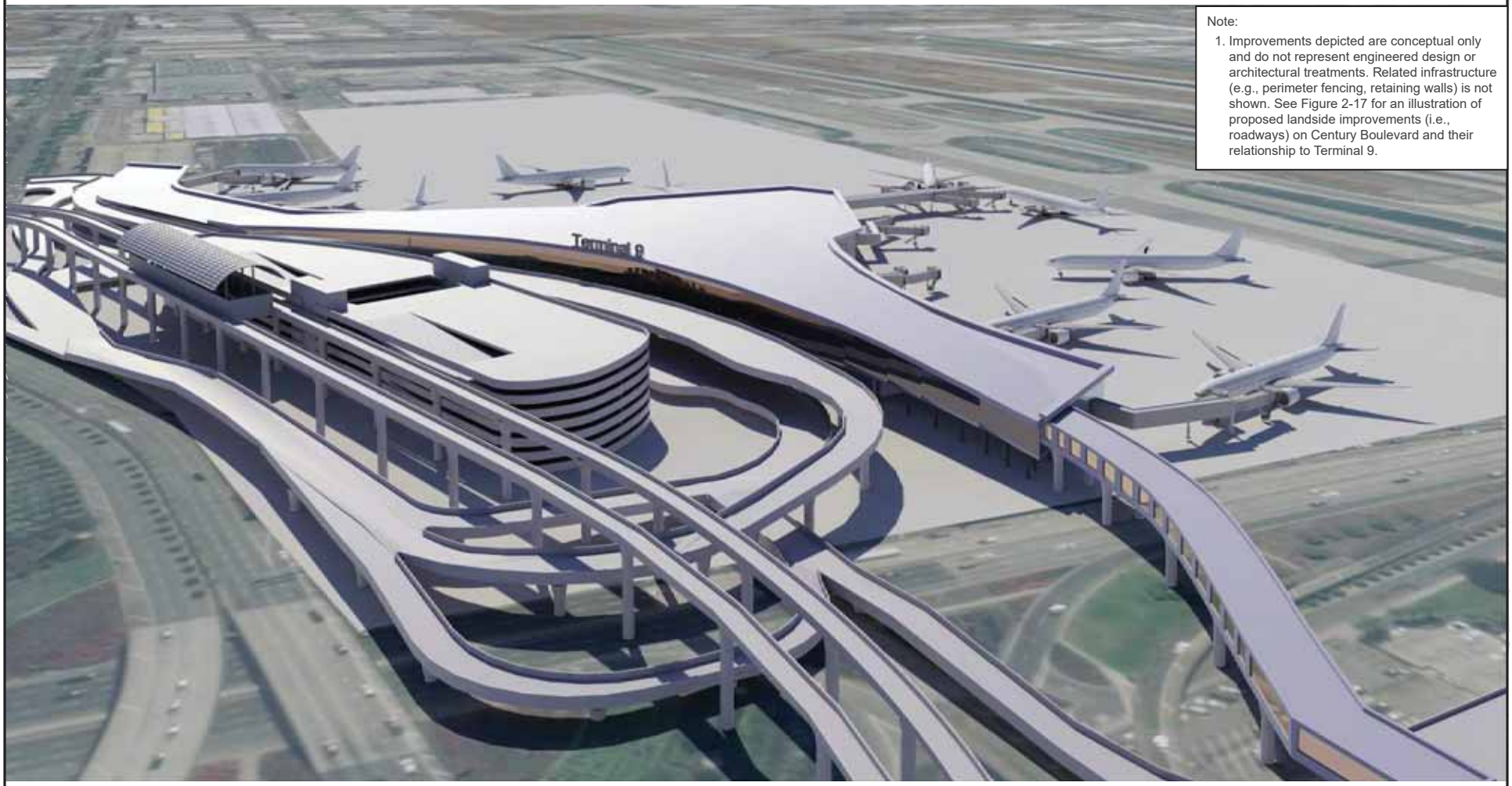
Not to Scale

LAX Airfield and Terminal Modernization Project

Terminal 9 - Conceptual Site Plan

Figure
2-13

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Note:

1. Improvements depicted are conceptual only and do not represent engineered design or architectural treatments. Related infrastructure (e.g., perimeter fencing, retaining walls) is not shown. See Figure 2-17 for an illustration of proposed landside improvements (i.e., roadways) on Century Boulevard and their relationship to Terminal 9.

Source: Ricondo & Associates, Inc., 2018
Prepared by: CDM Smith, October 2020

Not to Scale

LAX Airfield and Terminal Modernization Project

Terminal 9 Conceptual View – Landside

Figure
2-14



Legend

APM - Automated People Mover
N.A.P - Not a Part of Project

Notes:

1. Improvements depicted are conceptual only and do not represent engineered design or architectural treatments. Related infrastructure (e.g., perimeter fencing, retaining walls) is not shown.
2. To be constructed as part of the LAX Landside Access Modernization Program.
3. Parking facility could range from a surface lot to a multi-level garage.

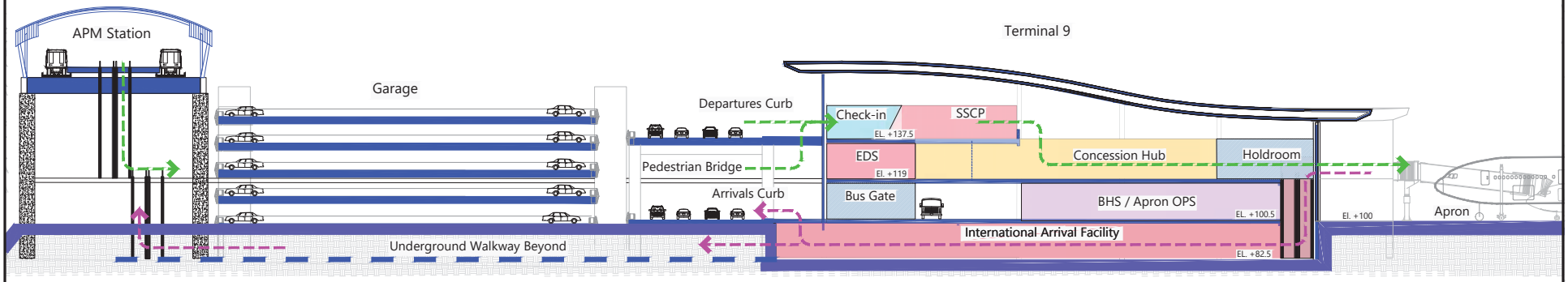
Source: Ricondo & Associates, Inc., 2018
Prepared by: CDM Smith, October 2020

Not to Scale

LAX Airfield and Terminal Modernization Project

Terminal 9 Conceptual View - Airside

Figure
2-15



Legend

APM - Automated People Mover
BHS - Baggage Handling System
EDS - Explosive Detection System
OPS - Operations
SSCP - Security Screening Checkpoint

Note:

1. Improvements depicted are conceptual only and do not represent engineered design or architectural treatments.

Source: Ricondo & Associates, Inc., 2018
Prepared by: CDM Smith, October 2020

Not to Scale

LAX Airfield and Terminal Modernization Project	Terminal 9 Passenger Flows	Figure **2-16**

2.4.2.3 Removal/Replacement of West Remote Gates

As indicated above in Section 2.4.1.1, *Taxiway D Extension West*, the westward extension of Taxiway D would result in the removal of nine West Remote Gates. As part of the proposed Project, although not required due to the extension of Taxiway D, an additional six West Remote Gates would be decommissioned. These 15 West Remote Gates would be replaced by the new gates associated with Concourse 0 and Terminal 9. With implementation of the proposed Project, 15 of the existing 18 West Remote Gates would no longer be used for regularly-scheduled commercial flights. The three remaining West Remote Gates would be retained to provide operational flexibility, such as for intermittent use if needed during peak surges in activity, if several CTA gates are out of service for maintenance, or for special flights requiring additional security and special logistics (e.g., Air Force One). The number of gates associated with the West Remote Gates area, Concourse 0, and Terminal 9 under existing conditions and with implementation of the proposed Project is provided in **Table 2-2**.

Table 2-2
West Remote Gates and Passenger Gates with Implementation of Concourse 0 and Terminal 9

Location	Existing Conditions			Future Conditions with Proposed Project			
	Remote Gates	Contact Gates	Total Gates	Remote Gates	Contact Gates	Total Gates	Net Change in Gates
West Remote Gates	18	0	**18**	3	0	**3**	**-15**
Concourse 0[1, 2]	0	0	**0**	0	6 - 9	**6 - 9**	**6 - 9**
Terminal 9[3]	0	0	**0**	0	12 - 18	**12 - 18**	**12 - 18**
Total	**18**	**0**	**18**	**3**	**18 - 27**	**21 - 30**	**3 - 12**

Source: LAWA, 2019.

Notes:

1 Passenger gates at Concourse 0 reflect net new gates. As described in Section 2.4.2.1, two of the new gates at Concourse 0 would replace two existing gates at Terminal 1 that would be removed as a result of Concourse 0.

2 As described in Section 2.4.2.1, Concourse 0 could accommodate up to 11 narrowbody aircraft or up to five widebody aircraft along with three narrowbody aircraft. As such, the number of net new gates, with the loss of two existing gates at Terminal 1, would be between six and nine.

3 As described in Section 2.4.2.2, Terminal 9 could accommodate up to 12 widebody aircraft or up to 18 narrowbody aircraft. As such, the number of new gates would be between 12 and 18.

As described above in Section 2.4.2.1, Concourse 0 is proposed primarily as an 11-gate concourse facility, at which 11 narrowbody aircraft could utilize all of those gates at the same time. Concourse 0 could also accommodate up to five widebody aircraft and three narrowbody aircraft at the same time, utilizing the same gates and passenger boarding bridges as otherwise available for 11 narrowbody aircraft. It is anticipated that Southwest Airlines would be the primary operator of Concourse 0 for the foreseeable future, and Southwest Airlines currently only has narrowbody aircraft in its fleet.

As described above in Section 2.4.2.2, Terminal 9 is proposed primarily as a 12-gate terminal facility, at which 12 widebody aircraft could utilize all of those gates at the same time. Alternatively, Terminal 9 could also accommodate up to 18 narrowbody aircraft at the same time, utilizing the same gates and passenger boarding bridges as otherwise available for 12 widebody aircraft.[17] Terminal 9 would primarily serve international flights, with capabilities to also serve domestic flights. In light of current and anticipated

[17] Terminal 9 is proposed to include a Multiple Aircraft Ramp System (MARS) to provide LAWA with the operational flexibility to serve multiple aircraft fleet-mixes over time. The gates at Terminal 9 could accommodate up to 12 wide-body aircraft, or up to 18 narrowbody aircraft, or various combinations thereof.

future growth in international flights to and from LAX, it is anticipated that Terminal 9 would be utilized primarily by widebody aircraft.

Similar to the descriptions above of Concourse 0 and Terminal 9, the existing West Remote Gates currently can be used by a combination of narrowbody and widebody aircraft, depending on needs at the time.

In summary, the accounting of gates associated with Concourse 0, Terminal 9, and the West Remote Gates depends on their utilization by aircraft type, in terms of narrowbody aircraft or widebody aircraft, which can vary over time, even during the course of the day.

2.4.3 Landside Elements

2.4.3.1 Characteristics

As shown on **Figure 2-17**, the landside improvement conceptual plan includes arrival and departure roadways and a parking facility to support the Terminal 9 passenger facility, along with new roadway segments that would improve vehicle access to, and egress from, the existing CTA. As part of these improvements, certain segments of existing roadways near Century Boulevard and Sepulveda Boulevard would be demolished, as shown in Figure 2-17. The landside improvement plan would also include construction of a seventh APM station at Terminal 9 on the previously-approved LAX APM line, as well as construction of a pedestrian corridor between Terminals 8 and 9 that would bridge across Sepulveda Boulevard.

The roadway system concept for Terminal 9 envisions an upper level roadway for departures and a lower level roadway for arrivals, or possibly a single level for both arrivals and departures. The proposed design would also provide connections to the proposed Terminal 9 parking facility and would be integrated with the previously-approved LAX Landside Access Modernization Program roadway improvements. **Figure 2-18** and **Figure 2-19** delineate the routes that would provide CTA and Terminal 9 access to and from areas north, south, and west of the airport. The types of improvements anticipated as part of the roadway system concept for the proposed Project would build upon improvements approved as part of the LAX Landside Access Modernization Program and provide the following additional benefits for traffic related to the CTA:

- Rerouting of exiting CTA vehicles to Sepulveda Boulevard via new grade-separated ramps north of Century Boulevard to extend the merging zones and vehicle queuing areas
- Rerouting of entering CTA vehicles on Sepulveda Boulevard via a new at-grade ramp for northbound traffic and a new grade-separated ramp for southbound traffic, all of which would tie into a new elevated roadway system that includes vehicle queuing areas
- Creation of a common entry point east of Sepulveda Boulevard for all vehicles entering the CTA
- Improvement to traffic flow into and out of the CTA
- Simplified roadway configuration and maximized distances for driver wayfinding and decision-making to multiple destinations
- Improvement of through-traffic flow for surrounding communities (i.e., vehicles on Sepulveda Boulevard that are not accessing the airport) by reducing traffic congestion on Sepulveda Boulevard

The proposed roadway system would improve overall access to and from the CTA, and would serve Terminal 9, with a combination of segments that are elevated or at-grade, with connecting ramps.

Figure 2-20 through **Figure 2-23** provide 3D visualizations of various areas of the roadway system to illustrate these physical relationships.

2.4.3.2 Relationship to Airspace/Airfield Surfaces

2.4.3.2.1 Part 77 Surfaces

FAR Part 77, *Safe, Efficient Use and Preservation of the Navigable Airspace*, serves as a means of identifying the airspace required for safe operation of aircraft at or near an airport.[18] This regulation establishes imaginary surfaces extending outward from the runways within which it is required that the FAA be notified of any proposed development or structural changes that could obstruct the path of operating aircraft. These "imaginary surfaces" are three dimensional, starting at ground level around each runway and sloping upward and outward at various angles for various distances. The standards that define these imaginary surfaces provide guidance to state and local governments in their efforts to control land use around airports so as to protect aircraft in flight and people on the ground. **Figure 2-24** illustrates the various imaginary surfaces associated with FAR Part 77.

The FAR Part 77 imaginary surfaces are primarily intended to serve as a means of identifying objects that require more detailed analyses specific to the types of airspace operations and related safety requirements that occur within those surfaces. It is not unusual for there to be objects near an airfield that penetrate the runway Part 77 Surfaces, including natural elevations, vegetation (i.e., trees and bushes), signs, street lights on nearby roadways, antennas, and buildings/structures and appurtenances. Based on the nature, location, and extent of a penetration into a Part 77 surface and its relationship to specific airspace operations and safety requirements, there are various means of dealing with the object. Options can range from doing nothing (i.e., for low-risk objects), to placing high-visibility markings and lighting on the object to make it highly visible to pilots and indicating such objects on avigation maps, to lowering, reducing, or removing the object. In some cases, an approach or departure procedure will be modified to allow aircraft to safely navigate around or above an object that penetrates a Part 77 surface.

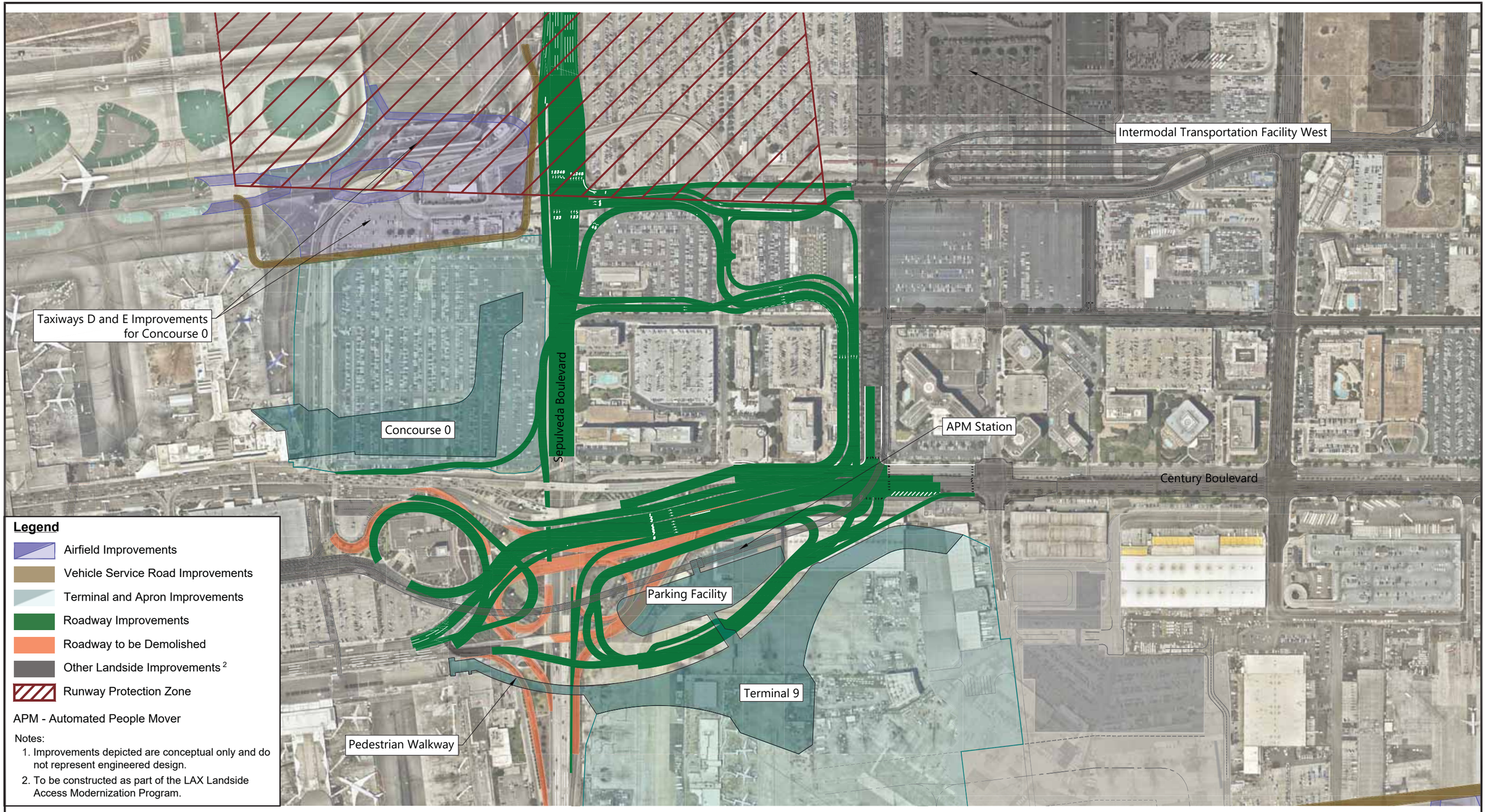
There are numerous objects that currently penetrate the Part 77 Surfaces at LAX, including around the north airfield, mostly consisting of streetlight poles, signs, antennas, natural topography (i.e., Dunes area), and vegetation. Buildings within the Part 77 Surfaces for the north airfield currently include, but are not limited to, multi-story structures to the southeast, including hotels and offices on Century Boulevard and Sepulveda Boulevard, and a multi-story parking structure and office to the northeast.

The airfield, terminal, and landside improvements proposed by the Project would not penetrate Part 77 Surfaces.

2.4.3.2.2 Runway Protection Zones

Runway Protection Zones (RPZs) are trapezoidal-shaped areas located at ground level beyond each end of a runway and are designed to enhance the protection of people and property on the ground. FAA takes the position that it is desirable to keep the entire RPZ clear of all objects but that where this is impractical, airport sponsors, at a minimum, should maintain the RPZ clear of all facilities supporting incompatible activities. As shown on Figure 2-17, a portion of the proposed improvements to roadways are located within the eastern RPZ for Runway 6R-24L; however, although parts of the proposed roadways would be within the RPZ, these roads would be at-grade (i.e., would not penetrate Part 77 Surfaces) and would primarily replace and/or alter existing roadways.

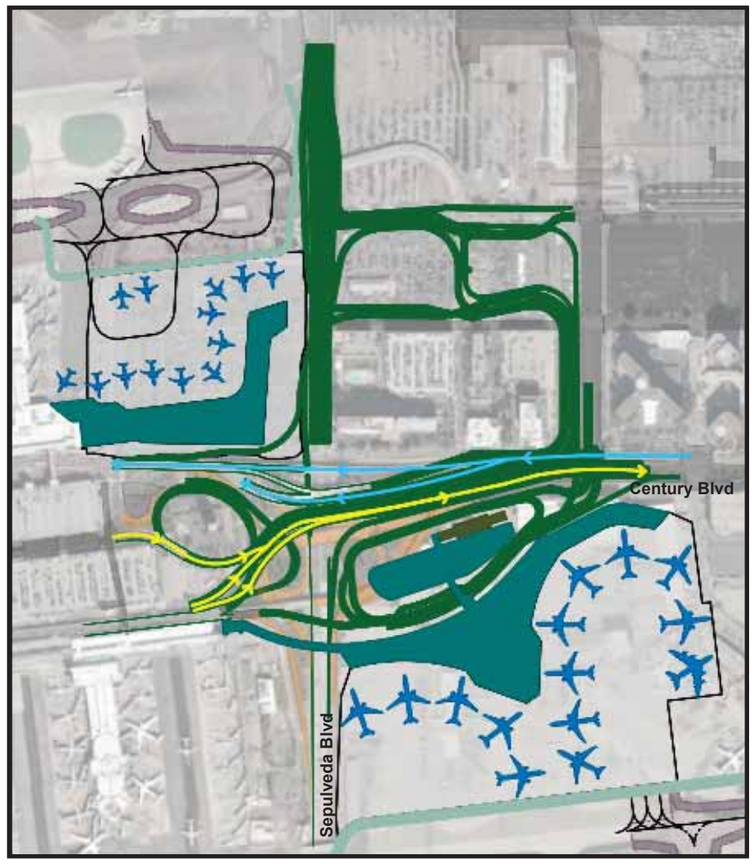
[18] U.S. Department of Transportation, Federal Aviation Administration, *14 Code of Federal Regulations (CFR) Part 77, Safe, Efficient Use and Preservation of the Navigable Airspace*, July 21, 2010. Available: https://www.govinfo.gov/content/pkg/FR-2010-07-21/pdf/2010-17767.pdf.



Sources: Los Angeles World Airports, June 2017 (aerial photography); Ricondo & Associates, Inc., May 2018 (Concourse 0 and Terminal 9); CFWright Consulting, LLC, July 2020 (improved CTA entrance/exit); Los Angeles World Airports, July 2020 (LAX Landside Access Modernization Program)
Prepared by: CDM Smith, October 2020

LAX Airfield and Terminal Modernization Project	Landside Improvements - Conceptual Plan and Runway Protection Zone	Figure 2-17

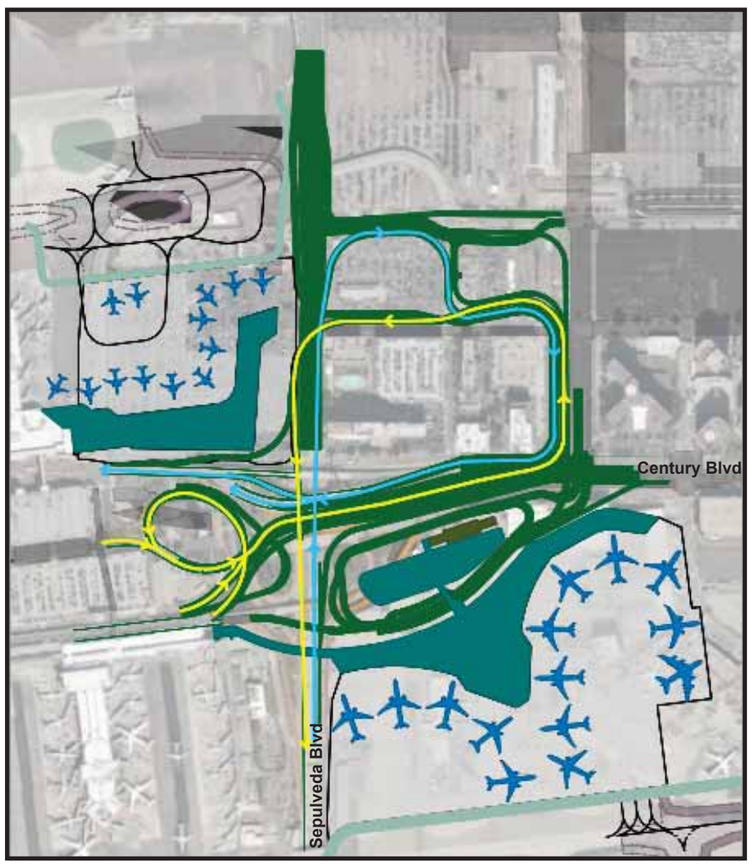
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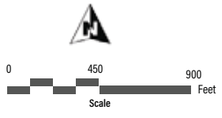
Central Terminal Area Access to and from the East



Central Terminal Area Access to and from the North



Central Terminal Area Access to and from the South



Sources: Ricondo & Associates, Inc., August 2020
Prepared by: CDM Smith, October 2020

Legend

- Inbound to the Central Terminal Area
- Outbound from the Central Terminal Area
- Roadway Improvements
- Roadways to be Demolished
- Terminal and Related Improvements

LAX Airfield and Terminal Modernization Project

Access to and from the Central Terminal Area with Proposed Landside Improvements

Figure **2-18**

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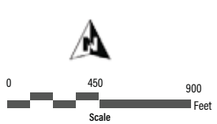
Terminal 9 Access to and from the East



Terminal 9 Access to and from the North



Terminal 9 Access to and from the South



Sources: Ricondo & Associates, Inc., August 2020
Prepared by: CDM Smith, October 2020

Legend

- Inbound to Terminal 9
- Outbound from Terminal 9
- Roadway Improvements
- Roadways to be Demolished
- Terminal and Related Improvements

LAX Airfield and Terminal Modernization Project

Access to and from Terminal 9 with Proposed Landside Improvements

Figure **2-19**

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Legend

APM - Automated People Mover
C0 - Concourse 0
T1 - Terminal 1
T7 - Terminal 7
T8 - Terminal 8
T9 - Terminal 9

Notes:

1. Improvements depicted are conceptual only and do not represent engineered design or architectural treatments. Related infrastructure (e.g., perimeter fencing, retaining walls) is not shown.
2. APM to be constructed as part of the LAX Landside Access Modernization Program. Other LAX Landside Access Modernization Program improvements (e.g., East CTA APM Station and associated pedestrian bridge to Terminal 1) are not shown.

Not to scale

Source: CDM Smith, 2019
Prepared by: CDM Smith, October 2020

LAX Airfield and Terminal Modernization Project

View Looking North along Sepulveda Boulevard

Figure
2-20

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Not to scale

Source: CDM Smith, 2019
Prepared by: CDM Smith, October 2020

Notes:
1. Improvements depicted are conceptual only and do not represent engineered design or architectural treatments. Related infrastructure (e.g., perimeter fencing, retaining walls) is not shown.
2. APM to be constructed as part of the LAX Landside Access Modernization Program. Other LAX Landside Access Modernization Program improvements (e.g., East CTA APM Station and associated pedestrian bridge to Terminal 1) are not shown.

LAX Airfield and Terminal Modernization Project

View Looking Northwest across Western Portion of
Ternimal 9 (Foreground) and Concourse 0 (Background)

Figure
2-21

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Not to scale

Source: CDM Smith, 2019
Prepared by: CDM Smith, October 2020

Legend

C0 - Concourse 0
T8 - Terminal 8
T9 - Terminal 9

Notes:

1. Improvements depicted are conceptual only and do not represent engineered design or architectural treatments. Related infrastructure (e.g., perimeter fencing, retaining walls) is not shown.
2. APM to be constructed as part of the LAX Landside Access Modernization Program.

LAX Airfield and Terminal Modernization Project

View Looking South along Sepulveda Boulevard

Figure **2-22**

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LEGEND

C0 - Concourse 0
T7 - Terminal 7
T8 - Terminal 8
T9 - Terminal 9

Notes:

1. Improvements depicted are conceptual only and do not represent engineered design or architectural treatments. Related infrastructure (e.g., perimeter fencing, retaining walls) is not shown.
2. APM to be constructed as part of the LAX Landside Access Modernization Program.

Not to scale

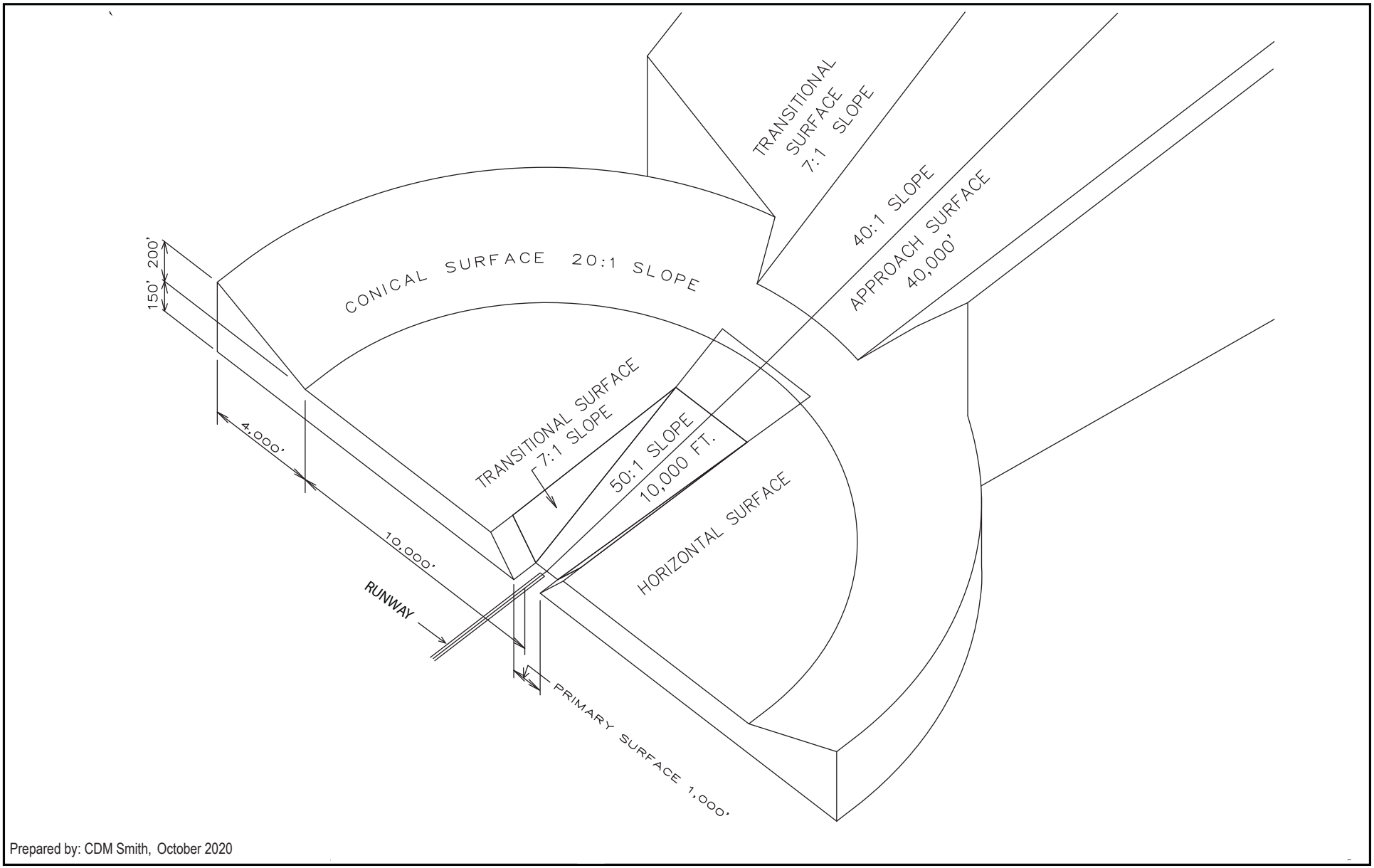
Source: CDM Smith, 2019
Prepared by: CDM Smith, October 2020

LAX Airfield and Terminal Modernization Project

View Looking South with Roadway Improvements in Foreground and Terminal 9 in Background

Figure **2-23**

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Prepared by: CDM Smith, October 2020

LAX Airfield and Terminal Modernization Project

Part 77 Imaginary Surfaces

Figure
2-24

2.4.4 Utilities

Implementation of the proposed Project would include the provision of utilities to serve the proposed facilities, including domestic water, fire water, reclaimed water, electrical and communication systems, natural gas and fuel systems, and stormwater and wastewater systems.

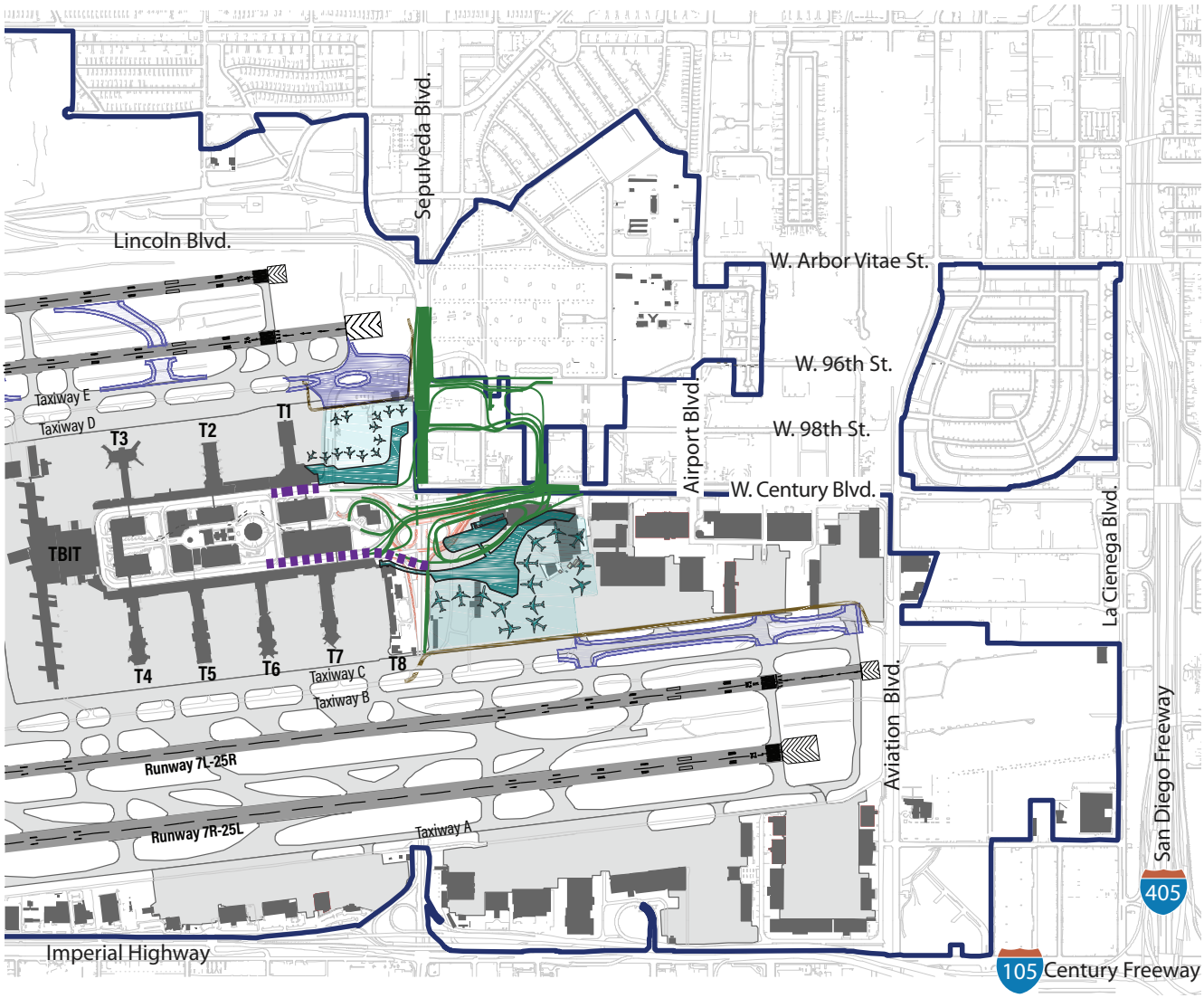
Construction of the proposed Project would include demolition, reconstruction, and construction of new roadways or facilities within and near the CTA. The majority of utilities would be extended to serve the proposed buildings and would be sized for the anticipated demand loads and expected lifetimes of the facilities. Most of the existing utility main lines are located within roadway rights-of-way, providing relatively free access for maintenance, repair, or upgrades to service. Within the CTA, however, the major drainage facilities that provide direct connections from the buildings to the city storm drains and sewer systems lie under the airfield and are not located within the roadways. Some of the utilities are private facilities owned by LAWA and some are provided by the respective public utility services. LAWA typically provides the physical infrastructure for utilities (conduits, pipe, duct banks, etc.) whether they are private or public. The operating authority typically provides the supply infrastructure (such as high voltage or low voltage cable), or the utility commodity (such as water and gas, etc.). LAWA provides drainage infrastructure from LAWA properties in the CTA to the appropriate public main infrastructure such as major storm drains or wastewater sewers.

The Los Angeles Department of Water and Power (LADWP) supplies water and power to the airport. This service also includes fire water and reclaimed water (provided by separate systems). Sempra Energy supplies natural gas. Telephone and internet services in the airport area are supplied by a variety of technology providers.

LAWA recently entered into an agreement with LADWP to provide reclaimed water to LAX from a new facility to be constructed at the Hyperion Water Reclamation Plant (HWRP). Under this agreement, the City of Los Angeles Department of Public Works, Bureau of Sanitation, will design and construct a 1.5 million gallon per day (mgd) Advanced Water Purification Facility (AWPF) at HWRP that will be expandable to 5 mgd. The Hyperion AWPF will produce advanced-treated recycled water for non-potable use at LAX and other facilities and is expected to be in operation in 2022.[19] In order to use this reclaimed water at LAX, LAWA will construct reclaimed water lines from LADWP's facilities into the CTA. These pipelines will extend from Pershing Drive east along World Way West and continue east to the CTA where the south branch of the water line system would terminate near Terminal 6 and the north branch of the water line system would terminate near the future Terminal 1.5, which is currently under construction. As part of the proposed Project, reclaimed water lines would be extended from these termini to Terminal 9 and Concourse 0, respectively (see **Figure 2-25**).

Also as part of the proposed Project, potable water lines would be extended or upgraded to serve Terminal 9. Specifically, existing potable water lines located west of the Terminal 9 site would be extended to the proposed facility (via Sepulveda Boulevard/Century Boulevard or 98th Street/Jetway Boulevard) or existing lines in Century Boulevard would be upgraded to ensure sufficient water pressure and capacity. Similarly, new or upgraded wastewater distribution lines would be installed to serve Concourse 0. These lines would consist of a new pipeline that would connect Concourse 0 to the main outfall sewer, or upgrades to existing nearby local collector pipelines that would be up-gauged to serve the proposed Project.

[19] *Memorandum of Agreement No. WR-17-3002 Between the Los Angeles Department of Public Works – Bureau of Sanitation, the Los Angeles Department of Water and Power, and the Los Angeles World Airports Relative to the Hyperion Advanced Water Purification Facility*, May 30, 2018.



Legend

- LAX Property Boundary
- Airfield Improvements
- Terminal and Related Improvements
- Vehicle Service Road
- Roadway Improvements
- Roadway to be Demolsihed
- Proposed Reclaimed Water Line Extension

TBIT - Tom Bradley International Terminal

Note:

1. Improvements depicted are conceptual only and do not represent engineered design

0 0.25 0.5 Miles

Scale

Sources: Ricondo & Associates, Inc., April 2020 (basemap); Los Angeles World Airports, January 2020 (Airport Layout Plan); CDM Smith, April 2020 (Airport Property Line); Ricondo & Associates, Inc., October 2018 (Project Elements); CF Wright Consulting, July 2020 (Roadway Elements)
Prepared by: CDM Smith, October 2020

LAX Airfield and Terminal Modernization Project	Reclaimed Water Pipeline Extension	Figure **2-25**

2.4.5 Sustainability

The proposed Project would be designed and constructed in accordance with LAWA's Sustainable Design and Construction Policy, which requires that new buildings be designed to achieve a minimum of the United States Green Building Council's (USGBC) Leadership in Energy and Environmental Design (LEED®) Silver certification.[20] LEED® Silver certification requires a project to be designed in a manner to save energy, water, and other resources, and to generate less waste and support human health. The LEED® Silver certification requirement would apply to Concourse 0 and Terminal 9. In addition, Concourse 0 and Terminal 9 would be required to be constructed in accordance with the Los Angeles Green Building Code (LAGBC), which is based on the California Green Building Code (CALGreen).[21,22] The proposed airfield and roadway improvements are not eligible for LEED® certification, which applies to buildings. In accordance with LAWA's Sustainable Design and Construction Policy, these improvements would be required to adhere to LAWA's Sustainable Design and Construction Requirements, which incorporate sustainability concepts from the LEED® system, LAGBC, Institute for Sustainable Infrastructure's Envision framework, and other airport sustainability guidelines.[23]

The Project would also comply with LAWA's Design and Construction Handbook (DCH),[24] which includes policies and requirements aimed at reducing environmental impacts associated with construction projects at LAX, including air pollutant emissions, noise, and potable water use, among others. Key provisions in the DCH that pertain to the environmental topics addressed in this EIR include the following:

- Contractors shall post a publicly-visible sign(s) with contact person and telephone number for dust complaints to ensure implementation of fugitive dust control measures. This person shall respond and take corrective action, if necessary, within 24 hours.
- Contractors shall provide vehicle tracking control at construction staging area access road entrances to reduce entrained dust.
- Contractors shall be responsible for continuous cleanup of all construction-related dirt on approach routes to the construction site and, when requested by LAWA, contractors shall furnish and operate a self-loading motor sweeper with spray nozzles at once each working day for the purpose of keeping paved areas acceptably clean wherever construction is incomplete.
- During construction, contractor shall demonstrate that all unpaved ground surfaces are covered or treated sufficiently to minimize fugitive dust emissions.
- During construction, contractor shall use adequate watering techniques to alleviate accumulation of construction-generated dust and shall comply with South Coast Air Quality Management District (SCAQMD) Rule 403 – Fugitive Dust.
- Idling or queuing of diesel-fueled vehicles and equipment shall be limited to five minutes.
- Every effort shall be made to utilize grid-based electric power at any construction site, where feasible. Grid-based power can be from a direct hookup or a tie in to electricity from power poles.

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20 City of Los Angeles, Los Angeles World Airports, *LAWA Sustainable Design and Construction Policy*, September 7, 2017. Available: https://www.lawa.org/-/media/lawa-web/tenants411/file/lawa-sustainable-design-and-construction-policy.ashx.

21 City of Los Angeles, Los Angeles Municipal Code, Chapter IX, Article 9, *Green Building Code*, as amended.

22 24 California Code of Regulations, Part 11, California Building Standards Commission, *2019 California Green Building Standards Code (CALGreen)*. Available: https://www.dgs.ca.gov/BSC/Resources/Page-Content/Building-Standards-Commission-Resources-List-Folder/CALGreen.

23 City of Los Angeles, Los Angeles World Airports, *Los Angeles International Airport Sustainable Design & Construction Requirements*, August 4, 2017. Available: https://www.lawa.org/-/media/lawa-web/tenants411/file/sustainable-design-construction-requirements.ashx.

24 City of Los Angeles, Los Angeles World Airports, *2020 Design and Construction Handbook (DCH), Version 1.0,* June 30, 2020. Available: https://www.lawa.org/en/lawa-businesses/lawa-documents-and-guidelines/lawa-design-and-construction-handbook.

- Trucks with a gross vehicle weight rating of 14,001 pounds shall be required to comply with U.S. Environmental Protection Agency (USEPA) 2010 emissions standards or next cleanest vehicle available, as approved by LAWA. In addition, off-road diesel-powered equipment shall be required to meet USEPA Tier 4(final) standards or the next cleanest equipment available, as approved by LAWA, with some exceptions.
- Material and debris haul trucks shall be constructed, or contents covered, such that the material or debris does not sift, blow, leak, spill, or otherwise escape from the vehicle.
- Speed limits on unpaved construction sites shall be limited to 15 miles per hour and haul vehicles shall maintain at least six inches of freeboard.
- Construction staging (including loading/unloading of heavy construction materials and parking of construction vehicles) shall be prohibited on streets adjacent to schools, daycare centers, and hospitals.
- Haul routes shall be located away from residential areas (and from noise-sensitive receptors, to the extent feasible).
- Contractors shall use reclaimed water for construction activities, as feasible, when those activities are located in proximity to reclaimed water sources.
- Coating and paving material shall be formulations with low volatile organic compound (VOC) levels.
- All new aircraft parking positions shall be installed with ground power and pre-conditioned air, where applicable.
- New LAWA or tenant building construction or renovation projects shall meet one of the following:
  - LEED® Silver certification if the project meets the U.S. Green Building Code (USGBC) and LAWA LEED® Eligibility Criteria, unless exempted by LAWA's Sustainability Review Committee
  - Los Angeles Green Building Code (LAGBC) Tier 1 requirements if not eligible for LEED® certification
  - LAWA Sustainable Design and Construction requirements if not eligible for LEED® certification and not able to meet LAGBC Tier 1 requirements
- LAWA or tenant non-building projects shall meet LAWA Sustainable Design and Construction requirements if not eligible for or exempted from LEED® certification. Typical airport non-building projects include: runways, taxiways, and other airfield flatwork; roadways, bridges and tunnels; pavement rehabilitation; civil infrastructure/site utility work; exterior lighting; and landscaping.
- New large buildings shall be designed to be compatible with the use of reclaimed water in accordance with LAWA design direction.

In addition to, and/or in accordance with, the policies and requirements listed above, LAWA would incorporate sustainability features into the proposed Project. **Table 2-3** provides a summary of the sustainability features that would be implemented as part of the proposed Project and identifies which resource areas would be affected by the features. These features are either already required by code or by LAWA policy, or would serve to reduce environmental impacts that would be less than significant and, therefore, would not require mitigation under CEQA. Additional features may be identified and included in the proposed Project during the design process.

Table 2-3
Proposed Project Sustainability Features

Sustainability Feature	Feature Description	Resources Affected
LEED® Certification	Concourse 0 and Terminal 9 would achieve LEED® Silver requirements at a minimum to improve energy efficiency and reduce air pollutant emissions and water consumption (among other resource benefits). LEED® Silver designation could be met in a variety of ways, which could include the incorporation of solar power or other alternative energy sources, enhanced water conservation measures, Campus LEED® credits, and other options.	Air Quality, Human Health Risk, Energy, Greenhouse Gas Emissions, Water Supply, Wastewater Generation
Gate Electrification	Concourse 0 and Terminal 9 would have electrified gates to reduce air pollutant emissions associated with Auxiliary Power Units (APUs).	Air Quality, Human Health Risk, Energy, Greenhouse Gas Emissions
Energy Meters	Concourse 0 and Terminal 9 would have building-level smart energy meters and submeters that would be implemented throughout the proposed Project in accordance with LAWA's DCH and the City's Existing Building Energy and Water Efficiency (EBEWE) Ordinance to promote energy efficiency.	Air Quality, Human Health Risk, Energy, Greenhouse Gas Emissions
Operational Reclaimed Water	Concourse 0 and Terminal 9 would be capable of using reclaimed water from pipelines (i.e., "purple pipe" or similar reclaimed water solutions) as feasible and permitted, and in accordance with the commitments incorporated into the Water Supply Assessment prepared by LADWP for the proposed Project.	Water Supply, Wastewater Generation
Electric Vehicle (EV) Charging Stations	The Terminal 9 parking facility would have electric vehicle charging stations for plug-in hybrid and Zero Emission Vehicles (ZEV) in compliance with City code to encourage sustainable transportation options that will reduce air pollutant emissions.	Air Quality, Human Health Risk, Energy, Greenhouse Gas Emissions, Transportation
Smart Parking System	The Terminal 9 parking facility, if designed as a structure, would be equipped with a Smart Parking System to reduce vehicle emissions, in compliance with the LAX Air Quality Improvement Measures (AQIM).	Air Quality, Human Health Risk, Energy, Greenhouse Gas Emissions, Transportation
Ground Support Equipment Operations	LAWA would require that all GSE operators comply with LAWA's GSE Emissions Policy, including the requirement to achieve fleet average Nitrogen Oxides (NO_X) + Hydrocarbon emission factors in accordance with the Policy and the SCAQMD Memorandum of Understanding Memorandum of Understanding (MOU) with LAWA in order to reduce air pollutant emissions.	Air Quality, Human Health Risk, Energy, Greenhouse Gas Emissions
Transportation Programs	Participate in a transportation management organization and transportation demand management strategies for employees	Air Quality, Human Health Risk, Energy, Greenhouse Gas Emissions, Transportation
Construction Equipment	Use final Tier 4 diesel construction equipment or better where feasible	Air Quality, Human Health Risk, Energy, Greenhouse Gas Emissions
Construction Reclaimed Water	Reclaimed water would be used to control dust during airfield construction to reduce potable water use, as feasible	Water Supply, Wastewater Generation

Table 2-3
Proposed Project Sustainability Features

Sustainability Feature	Feature Description	Resources Affected
Water Meters	Concourse 0 and Terminal 9 would have building-level water meters and submeters throughout the proposed Project in accordance with the commitments incorporated into the Water Supply Assessment, LAWA's DCH, and the City's EBEWE Ordinance, to promote water efficiency	Water Supply, Wastewater Generation
Sustainable Landscaping	Drought-tolerant landscaping and micro-irrigation would be installed for all project-related landscaping to reduce potable water consumption	Water Supply, Wastewater Generation
Efficient Toilets	High-efficiency dual-flush toilets with a flush volume of 1.12 gallons or less would be installed to reduce potable water consumption	Water Supply, Wastewater Generation
Efficient Urinals	High-efficiency urinals with a flush volume of 0.11 gallons or less would be installed to reduce potable water consumption	Water Supply, Wastewater Generation
Efficient Dishwashers	ENERGY STAR-certified residential dishwashers (standard or compact) that use 3.5 gallons per cycle or less would be installed where feasible to reduce potable water consumption	Water Supply, Wastewater Generation

Source: LAWA, CDM Smith, 2020.

2.5 Enabling Projects

2.5.1 Enabling Projects, Facilities, and/or Activities

Enabling projects refer to existing uses located in or near the proposed improvement sites that would need to be removed and/or relocated to accommodate the proposed improvements. **Table 2-4** provides an overview of the enabling projects associated with the proposed Project, including the name, size, and disposition of each facility. **Figure 2-26a** and **Figure 2-26b** delineate the locations of the affected facilities. In the case of one enabling project, the Southwest Airlines GSE Facility (identified as #7 in Table 2-4 and on Figure 2-26a), the facility would be relocated to a new location at LAX. As described in Table 2-4, several relocation sites are under consideration for the new facility. No decision has been made regarding which of these options would be used to relocate this facility; one of the four locations, however, would be used. These four relocation site options are identified in **Figure 2-27**.

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Table 2-4
Description of Enabling Projects, Facilities, and/or Activities

Map ID #	Affected Facility	Facility Description	Approximate Building Size/Footprint Area of Affected Facility	Current Use	Disposition of Facility/Use	Project Component
1	Vehicle Service Road E (between Taxiway E17 and Taxiway R)	This portion of Vehicle Service Road E provides a route for airport vehicles to access the western portion of the north airfield.	386,000 square feet	Airfield road used by service vehicles	The westerly portion of the existing vehicle service road would be removed and would be replaced by a new vehicle service road located south of the Taxiway D extension.	Taxiway D Extension West
2	West remote passenger gates	The area situated south of Runway 6R-24L, north of World Way West, west of Taxiway AA, and east of Pershing Drive contains remote passenger gates. The West Remote Gates accommodate flights that cannot be handled in the CTA. Passengers are transported to and from the gates on buses from the CTA.	700,000 square feet	Aircraft passenger gates	Nine existing West Remote Gates would be required to be removed in order to accommodate the westerly extension of Taxiway D. In addition, an additional six West Remote Gates would be decommissioned (i.e., would no longer be used for regularly-scheduled commercial flights) as part of the proposed Project, even though those six gates are not within the area required for the extension of Taxiway D. The affected remote gates would be replaced by new passenger gates at Concourse 0 and Terminal 9.	Taxiway D Extension West
3	GSE staging areas	Several GSE staging areas are located within the western portion of LAX, including west of Taxiway AA between aircraft parking positions and West Remote Gates, and in two areas immediately south of Vehicle Service Road E, one located north of the FedEx maintenance facility and the other located west of the airfield busing facility. These outdoor areas are used by various airlines and aviation services companies to store GSE and related equipment when not in use.	Total area for the three GSE staging areas is approximately 56,000 square feet	GSE staging areas	Existing uses would be accommodated on nearby available on-airport property.	Taxiway D Extension West
4	LAWA maintenance facilities 7407 World Way West	LAWA's maintenance yard is located within the western portion of LAX north of World Way West. The overall facility occupies approximately 965,0000 square feet and includes over 20 buildings, sheds, and storage areas that include Fleet Maintenance; Paint Shop, Carpentry and Plumbing; Electrical, Mechanical, Upholstery, AC, and other trades; Welding; Spray Booth; and various storage buildings and offices. Employee parking is located in a parking lot on the east side of the facility.	187,000 square feet	Maintenance facilities	Maintenance facilities in the northern portion of the LAWA maintenance yard would be affected by the westerly extension of Taxiway D, including two buildings, maintenance service areas, maintenance storage areas, and a portion of the vehicle parking area. The displaced facilities would be moved south of World Way West, occupying the parking lot in and around a liquefied natural gas (LNG)/compressed natural gas (CNG) facility whose use is planned to be discontinued. No buildings would be required to be constructed to accommodate the relocation.	Taxiway D Extension West
5	FedEx maintenance facilities 7401 World Way West	FedEx operates a 950,000-square-foot (22.5-acre) maintenance facility on the western side of LAX that performs routine maintenance, safety checks, and major and minor unscheduled repairs. The facility includes a maintenance hangar, workshops, storage buildings, apron area and aircraft parking positions, and a blast fence. The total building area on the leasehold is approximately 423,000 square feet.	The area directly affected by the proposed Project is approximately 297,500 square feet. However, the proposed Project would require removal of the entire 8,750-square-foot component repair building, only a portion of which lies in the footprint. The total area affected is approximately 308,000 square feet.	Aircraft maintenance facilities	The westerly extension of Taxiway D would require the removal of some of FedEx's facilities in the northern portion of the site, including an aircraft parking position, aircraft apron area, component repair building, and hazardous materials storage shed. The affected uses would be consolidated within the remaining FedEx maintenance area. The blast fence on the eastern edge of the leasehold would be modified/ shortened by approximately 10 feet.	Taxiway D Extension West
6	Aircraft fueling system infrastructure	LAXFUEL Corporation operates an on-airport Jet A fuel storage facility (fuel farm) located north of World Way West and south of the north airfield. The fuel farm is an above-ground fuel storage facility that is integrated with fuel hydrant systems that deliver fuel to aircraft gates. The facility houses 19 large storage tanks, a state-of-the-art filtration system, a pumping system, an electronic monitoring system, and related facilities.	Approximately 40,000 square feet	Aircraft fueling facility truck loading rack	A truck loading rack at the LAXFUEL facility would be removed and relocated nearby.	Taxiway D Extension West

Table 2-4
Description of Enabling Projects, Facilities, and/or Activities

Map ID #	Affected Facility	Facility Description	Approximate Building Size/Footprint Area of Affected Facility	Current Use	Disposition of Facility/Use	Project Component
7	Southwest Airlines' GSE/vehicle maintenance facility and garage 9601 Coast Guard Road	A Southwest Airlines GSE/vehicle maintenance facility is located on the west side of the airport. The leasehold is 26,252 square feet, and includes a 7,972-square-foot building.	26,252 square feet	GSE/vehicle maintenance facility and garage	The existing maintenance facility and garage would be removed and relocated. Four sites are currently under consideration: (1) A 124,940-square-foot undeveloped parcel adjacent to the Police Firing Range, at 7117 W. Imperial Highway. (2) A 124,234-square-foot site housing the current Flying Food operation, which is located in a 32,090-square-foot building on California Street, at 6751 W. Imperial Highway. The Flying Food lease will expire in 2021. Flying Food is currently constructing an off-airport facility. (3) A 23,131-square-foot portion of the future Concourse 0. (4) A new building on a 28,907-square-foot site located west of the future LAX ITF West. See Figure 2-27 for relocation site options.	Taxiway D Extension West
8	Airfield Bus Yard Facility 7285 World Way West	The existing Bus Yard Facility is located northeast of the LAX fuel farm at 7285 World Way West. It has the capacity for 35 airfield buses and support vehicles to transport passengers between airside access points and the CTA and the West Remote Gates, and between airside terminal facilities and US Customs and Border Protection processing areas. The facility is not sufficient to accommodate LAWA's transition to an electric bus fleet. Development of a new Bus Yard is currently in progress. The new facility is independent from the proposed Project (see Table 3-1).	126,000 square feet	Facilities for airfield busing and parking	Construction of a new Bus Yard Facility at a different site has been approved and is occurring independently from the proposed Project (see Table 3-1). As part of the proposed Project, the existing airfield Bus Yard Facility and related infrastructure would be removed.	Taxiway D Extension West
9 thru 12	Navigation aids within the North Airfield	Existing navigational aids to be relocated include: the Automated Surface Observing System (i.e., weather station) - Map ID #9; Runway 24R Precision Approach Path Indicator for Runway 24R - Map ID #10; Runway 24L Precision Approach Path Indicator for Runway 24R - Map ID #11; and wind sock - Map ID #12.	NA	Navigational aid	These existing navigational aids would each be relocated to a suitable location in the north airfield.	Runway 6L-24R Exits
13	"LAX-it" passenger pickup lot 6351 W. Century Boulevard	The "LAX-it" pickup lot is located on a 20-acre site formerly occupied by the Park One privately-operated surface parking lot. LAX-it is a centralized area for airport passengers and guests to pickup a taxi and ride app service. The pickup lot will remain in service until the APM opens in 2023. Decommissioning of the pickup lot will occur independently from the proposed Project.	40 acres	LAX taxi/ride share pickup facility	The taxi/ride share pickup lot will be decommissioned independently from the proposed Project. The remaining infrastructure on the site would be demolished as part of the proposed Project.	Concourse 0
14	Allied Signal/Honeywell monitoring wells and remediation equipment	The LAX-it pickup lot/former Park One parking facility was previously occupied by an Allied Signal facility whose operation resulted in contamination of soil and groundwater beneath the site. Monitoring wells and remediation equipment is currently located on the site.	NA	Soil/groundwater remediation	Construction of Concourse 0 could result in the decommissioning and/or relocation of monitoring wells and remediation equipment located on the Project site. (See Section 4.5, *Hazardous Materials*, for additional discussion.)	Concourse 0
15	LAWA Airport Police Division Headquarters and vehicle parking 6320 W. 96th Street	The LAWA Airport Police Division (APD) has a 47,840-square-foot facility located at 6320 W. 96th Street, as well as nearby parking and ancillary facilities. The main facility is located east of Sepulveda Boulevard between Park One and the 96th Street Bridge. An ancillary APD building and parking area are located on a 1.17-acre parcel located on the west side of Alverstone Avenue between W. 96th Street and an unnamed road that lies to the south of the airfield perimeter fence. Additional APD parking is located on the northeast corner of W. 96th Street and Alverstone Avenue on a 1.65-acre parcel. LAWA is currently constructing a new Airport Police Facility that will co-locate many of APD's functions onto one site, including the facility on W. 96th Street. The new Airport Police Facility is independent from the proposed Project (see Table 3-1).	240,000 square feet	Police headquarters and vehicle parking area	Construction of a new LAWA APD Facility at a different site has been approved and is occurring independently from the proposed Project (see Table 3-1). As part of the proposed Project, the existing LAWA APD facility and related surface parking would be removed.	Concourse 0
16	Security Post 3 and Vehicle Service Road E (between Taxiway E7 and Security Post 3)	Security Post 3 provides an access point to the eastern portion of the north airfield for authorized vehicles. The affected portion of the vehicle service road provides a route for airport vehicles to access the easternmost portion of the north airfield.	42,000 square feet	Security post and airfield road used by service vehicles	The easternmost portion of the existing airside vehicle service road would be removed and relocated to the south of the proposed Taxiway D extension. Security Post 3 would be removed.	Concourse 0

Table 2-4
Description of Enabling Projects, Facilities, and/or Activities

Map ID #	Affected Facility	Facility Description	Approximate Building Size/Footprint Area of Affected Facility	Current Use	Disposition of Facility/Use	Project Component
17	96th Street, Alverstone Avenue, and unnamed street	Surface streets located west of Sepulveda Boulevard and north of the Airport Police Facility provide access to/from Sky Way/ 96th Street Bridge, the existing Airport Police Facility, and Security Post 3.	96th Street – approximately 665 feet; Alverstone Ave – approximately 300 feet Unnamed Street – approximately 420 feet	Roadways providing access to Sky Way/96th Street Bridge, Airport Police Facility, Security Post 3, and Sepulveda Boulevard	Portions of W. 96th Street, Alverstone Avenue, and an adjacent, unnamed access road would be closed and removed.	Concourse 0
18	LAX Gateway Pylons	Eleven Gateway pylons line 1.5 miles of Century Boulevard, growing in height from 25 feet to 60 feet before culminating in a ring of 15, 100-foot columns at the entrance to LAX.	NA	Aesthetic enhancement	Construction of the roadway improvements would require the relocation, reconfiguration, and removal of some of the pylons.	Landside improvements
19	Delta Air Lines GSE building	This facility houses Delta Air Lines' GSE storage and maintenance facility.	18,583 square feet	GSE maintenance	GSE maintenance activities have been relocated to the new Delta Air Lines Maintenance facility recently constructed within the West Aircraft Maintenance Area. The remaining infrastructure on the site would be demolished as part of the proposed Project.	Terminal 9
20	Aircraft parking areas	Aircraft parking areas associated with the American and United Airlines' leaseholds are located within the central and western portions of the Terminal 9 site, east of Sepulveda Boulevard. Three small aircraft maintenance support buildings (ranging from 180 to 275 square feet in size) are located within the westernmost aircraft parking area along the western edge of the Terminal 9 site.	272,000 square feet	Aircraft parking areas/storage	The existing aircraft parking areas and nearby buildings would be removed.	Terminal 9
21	American Eagle Commuter Terminal 6002 Avion Drive	The American Eagle Commuter Terminal services American Airlines' regional aircraft (i.e., commuter) operations. The facility includes a 33,165-square-foot passenger terminal with administrative support space; a 9,963-square-foot building used for baggage handling, office space, and storage for cabin services and light aircraft maintenance activities; and 10 aircraft gates.	43,128 square feet	Commuter Terminal	Commuter operations at this facility will be relocated to the Midfield Satellite Concourse as part of a separate, previously-approved, independent project. Demolition of the vacated facility would be required as an enabling project.	Terminal 9
22	Ground equipment maintenance/storage area	The central portion of the Terminal 9 site is used by United Airlines, Delta Air Lines, and American Eagle for ground equipment storage and maintenance.	135,000 square feet	GSE/equipment storage	The existing equipment maintenance/storage areas would be removed and the storage/ maintenance activities would be consolidated within existing facilities.	Terminal 9
23	LAWA Records Retention Building	The six-story LAWA Records Retention Building houses LAWA records and IT equipment. One floor of the building is leased by Delta Air Lines.	100,053 square feet	Records retention, IT operations, airline support operations	The existing building would be removed. LAWA records would be consolidated and relocated to existing LAWA office space or to an off-site storage facility. The LAWA IT equipment would be relocated to an existing LAWA office space (such as the administration building on World Way West or LAWA's Skyview office buildings). The Delta Air Lines use would be consolidated into existing airline facilities or relocated off of the airport.	Terminal 9
24	Mercury Air Cargo facility 6040 Avion Drive	A Mercury Air Cargo facility is located on the eastern end of the Terminal 9 site, at 6040 Avion Drive on a 235,826-acre site. The facility handles international and domestic airline cargo. Mercury Air Cargo's lease at this location will expire in 2021; a lease extension is currently underway. Relocation of the Mercury operation following expiration of the lease will occur independently from the proposed Project.	171,787 square feet	Cargo handling	Relocation of the cargo operation will occur independently from the proposed Project upon expiration of Mercury's lease. As part of the proposed Project, the existing facility and related infrastructure would be removed.	Terminal 9
25	American Airlines cargo staging area 5950/5970 Avion Drive	The 98,036-square-foot American Airlines Cargo and GSE Facility is located within the southern portion of the Century Cargo Complex.	40,000 square feet	Cargo handling/storage	A portion of the cargo staging area within the southeast corner of the parcel would be removed. Existing cargo handling/ storage would be consolidated within the leasehold.	Terminal 9

Table 2-4
Description of Enabling Projects, Facilities, and/or Activities

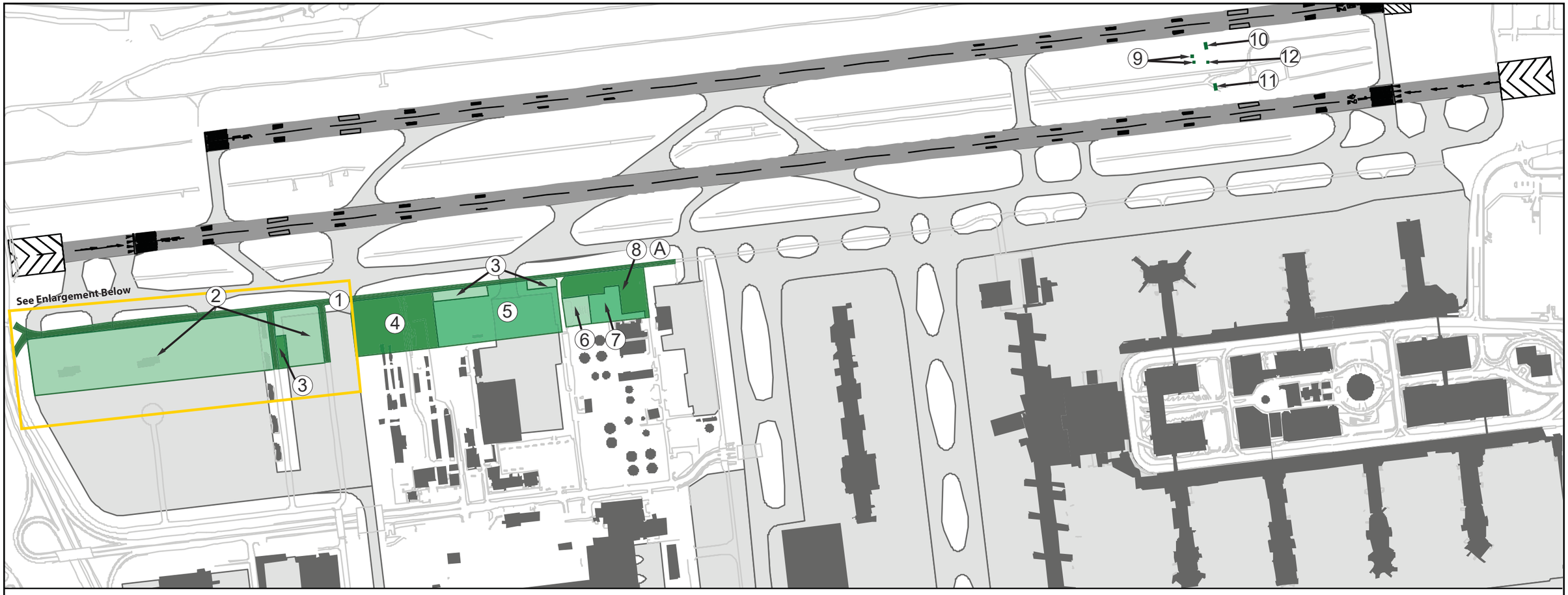
Map ID #	Affected Facility	Facility Description	Approximate Building Size/Footprint Area of Affected Facility	Current Use	Disposition of Facility/Use	Project Component
26	Air Freight Building #10 5908 Avion Drive	The 57,377-square-foot building and adjacent area is used for cargo operations.	The area directly affected by the proposed Project is approximately 55,000 square feet, of which approximately 10,000 square feet is the southernmost portion of the building. A slightly greater portion of the building may be required to be demolished to preserve the building's integrity (i.e., preserve load-bearing walls/components of the building); however, it is anticipated that the majority of the building would remain.	Cargo handling	A portion of the Air Freight #10 building and the adjacent ramp and vehicle access areas would be removed. Existing cargo handling would be consolidated within the remaining portion of the building.	Terminal 9
27	LAWA Operations aircraft parking areas	Aircraft parking areas are located between Air Freight Building #10 and Air Freight Building #8, and to the east of Air Freight Building #8.	250,000 square feet	Aircraft parking areas	The southerly portion of the aircraft parking areas would be removed.	Terminal 9
28	Air Freight Building #8 5720 Avion Drive	The 70,891-square-foot building and adjacent area is used by various tenants for cargo operations, GSE support, hazardous materials storage, and aircraft/maintenance/overhaul (MRO) support.	The area directly affected by the proposed Project is approximately 85,000 square feet, of which approximately 15,000 square feet is the southern portion of the building. A slightly greater portion of the building may be required to be demolished to preserve the building's integrity (i.e., preserve load-bearing walls/components of the building); however, it is anticipated that the majority of the building would remain.	Cargo handling, GSE, hazardous materials storage, and aircraft MRO support	A portion of the Air Freight #8 building, including the vehicle parking area to the west of the building and the equipment storage area to the east of the building, would be removed. Existing uses would be consolidated within the remaining portion of the building or relocated to other facilities at LAX.	Terminal 9
29	Vehicle Service Road C (between Taxiway C5 and east of Taxiway B1)	This portion of Vehicle Service Road C provides a route for airport vehicles to access the eastern portion of the south airfield.	280,000 square feet	Airfield road used by service vehicles	The easterly portion of the existing vehicle service road would be removed and would be replaced by a new vehicle service road located north of the proposed Taxiway C extension.	Terminal 9
30	Los Angeles Community College District property 9700 S. Sepulveda Boulevard	A Los Angeles Community College District property is located east of Sepulveda Boulevard between W. 96th Street and W. 98th Street. The property is improved with two airplane hangars that West Los Angeles College currently uses for the warehousing of movie set props and for instruction to support its Film/Television Production Crafts program. One course per quarter currently takes place at this facility. The majority of the site is leased to a private parking operator, which is operated in conjunction with the property located at 9600 S. Sepulveda Boulevard (see below).	2.06 acres	Community College, privately-operated public parking lot	The edges of the Los Angeles Community College District property would be acquired outright or through permanent or temporary construction easements. The existing structures along the southern edge of the property would be removed for the proposed roadway improvements. The main warehouse facility in the middle of the site would not be acquired and access to 96th Street would be maintained, allowing the facility to continue to be used for its current purposes.	Landside
31	Commercial parking lot 9600 S. Sepulveda Boulevard	WallyPark Express operates a commercial parking lot located north of Los Angeles Community College District property and south of 96th Street.	1.47 acres	Privately-operated public parking lot	The existing parking lot would be acquired and the structure at the northwest corner of the property would be removed.	Landside
32	LADWP parcel 9750 S. Vicksburg Avenue	The property located on the east side of Vicksburg Avenue north of W. 96th Street is owned by LADWP. The southern portion of the property is leased for private parking.	0.62 acres	Parking	The southern two-thirds (approximately) of the parcel, located north of 96th Street and south of the electrical substation, would be acquired and the parking lot would be removed.	Landside

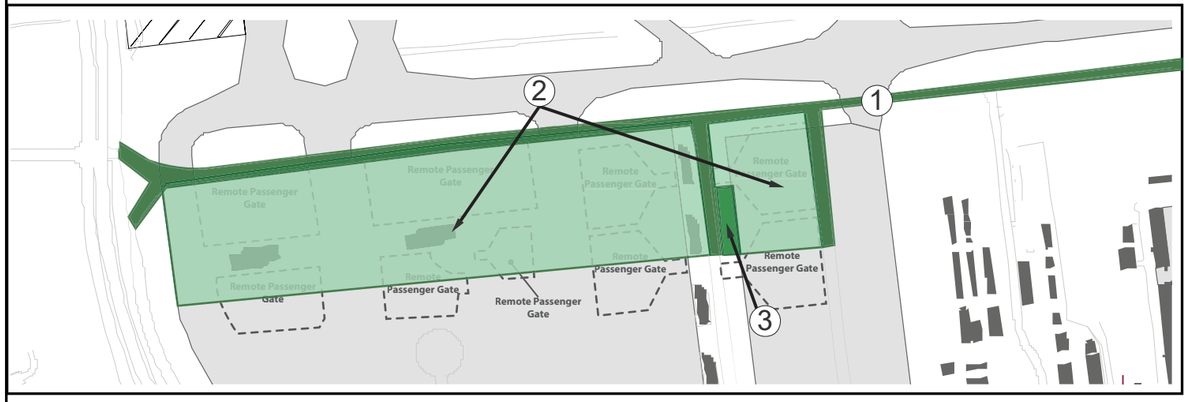
Table 2-4
Description of Enabling Projects, Facilities, and/or Activities

Map ID #	Affected Facility	Facility Description	Approximate Building Size/Footprint Area of Affected Facility	Current Use	Disposition of Facility/Use	Project Component
33	Commercial parking lot 6155 W. 98th Street	Sunrise LAX Airport Parking operates a parking lot and shuttle operation located between W. 96th Street and W. 98th Street, east of the LADWP parcel.	1.26 acres	Privately-operated public parking lot	The existing property would be acquired and the small structure on the southern edge of the site would be removed.	Landside
34	LAX Taxi Staging Lot	A taxi staging lot is located east of the Sunrise parking lot, between the W. 96th Street and W. 98th Street. The taxi staging lot is located on LAWA-owned property. The facility operates under a lease that will expire in 2021.	Approximately 1.3 acres	Taxi staging	The existing staging lot would be relocated or reconfigured. Relocation, if required, would occur on a nearby parcel, which could be on a LAWA-owned site or other location in the area.	Landside

Source: LAWA, CDM Smith, 2020.

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Enabling Projects

1. Vehicle Service Road "E"
2. West Remote Passenger Gates
3. GSE Staging Areas
4. LAWA Maintenance Facilties
5. FedEx Maintenance Facilites
6. Aircraft Fueling System Infrastructure
7. Southwest Airlines GSE Facility
8. Airfield Bus Yard Facility Demolition
9. ASOS
10. Runway 24R PAPI
11. Runway 24L PAPI
12. Wind Sock

Facilities to be Relocated Independently

A. Airfield Bus Yard Facility Relocation

Legend

- LAX Property Boundary
- Enabling Projects[1]

ASOS - Automated Surface Observing System
GSE - Ground Support Equipment
LAWA - Los Angeles World Airports
PAPI - Precision Approach Path Indicator

Note:
1. Various colors used only to differentiate between enabling project sites.

0 885 Feet
Scale

Sources: Ricondo & Associates, Inc., April 2020 (basemap); Los Angeles World Airports, January 2020 (Airport Layout Plan); CDM Smith, April 2020 (Airport Property Line and enabling projects)

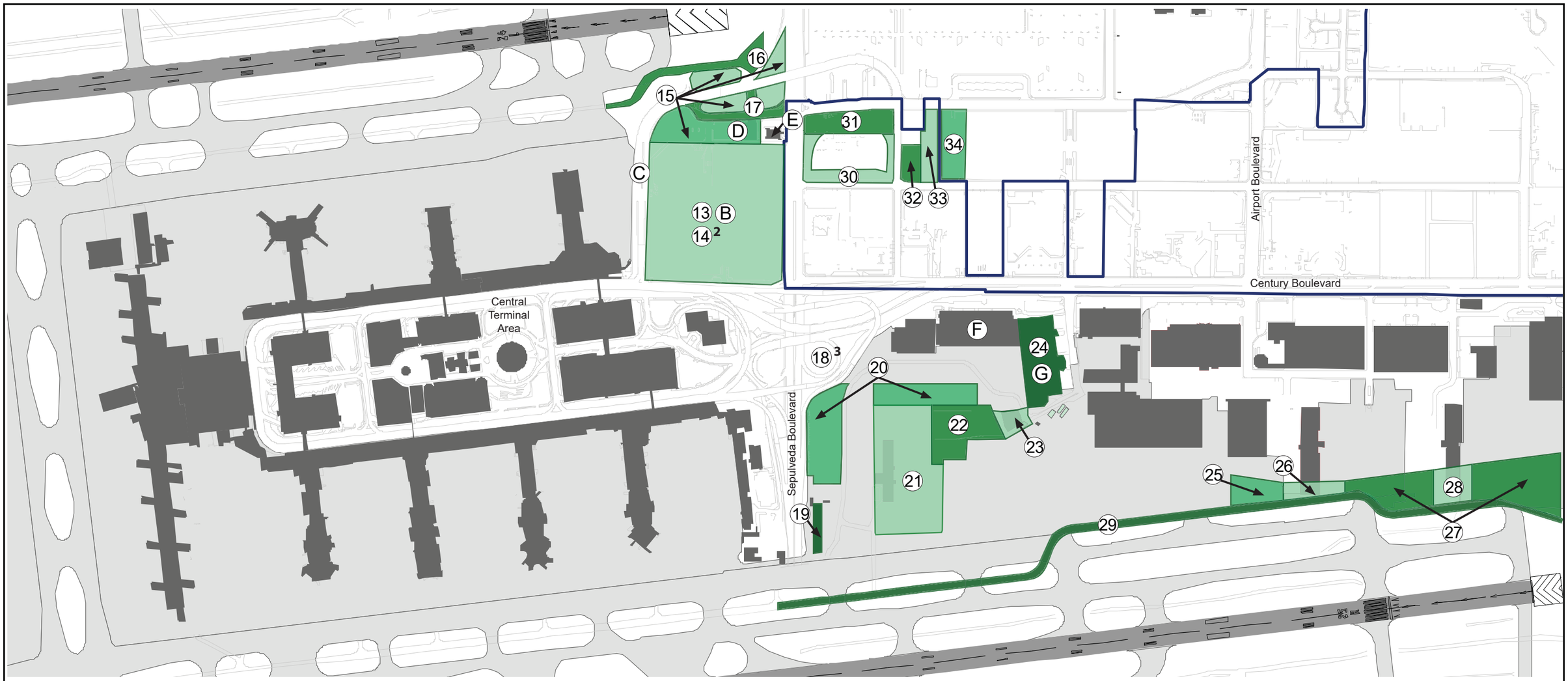
Prepared by: CDM Smith, October 2020

LAX Airfield and Terminal Modernization Project

Enabling Projects for Airfield Improvements

Figure **2-26a**

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0 885 Feet

Scale

Sources: Ricondo & Associates, Inc., April 2020 (basemap); Los Angeles World Airports, January 2020 (Airport Layout Plan); CDM Smith, April 2020 (Airport Property Line and enabling projects)

Prepared by: CDM Smith, October 2020

Enabling Projects

13. "LAX-it" Passenger Pickup Lot Site Demolition
14. Allied Signal/Honeywell Monitoring Wells/ Remediation Equipment
15. LAWA Airport Police Headquarters Demolition
16. Vehicle Service Road "E" & Security Post 3
17. 96th Street & Alverstone Avenue
18. LAX Gateway Pylons
19. Delta Air Lines GSE Building
20. Aircraft Parking Areas
21. American Eagle Commuter Terminal
22. Equipment Maintenance & Storage
23. LAWA Records Retention Building
24. Mercury Air Cargo Facility Demolition
25. American Airlines Cargo Staging Area
26. Air Freight Building #10
27. LAWA Operations Aircraft Parking Areas
28. Air Freight Building #8
29. Vehicle Service Road "C"
30. Los Angeles Community College District Property
31. Commercial Parking Lot
32. LADWP Parcel/Parking Lot
33. Commercial Parking Lot
34. LAX Taxi Staging Area

Facilities to be Removed or Relocated Independently

- B "LAX-it" Passenger Pickup Lot Relocation
- C Sky Way/96th Street Bridge Demolition
- D LAWA Airport Police Headquarters Relocation
- E Reliant Medical Facility Demolition
- F Delta Air Lines Hangar Complex Relocation/Demolition
- G Mercury Air Cargo Relocation

Legend

- LAX Property Boundary
- Enabling Projects[1]

GSE - Ground Support Equipment
LAWA - Los Angeles World Airports

Notes:

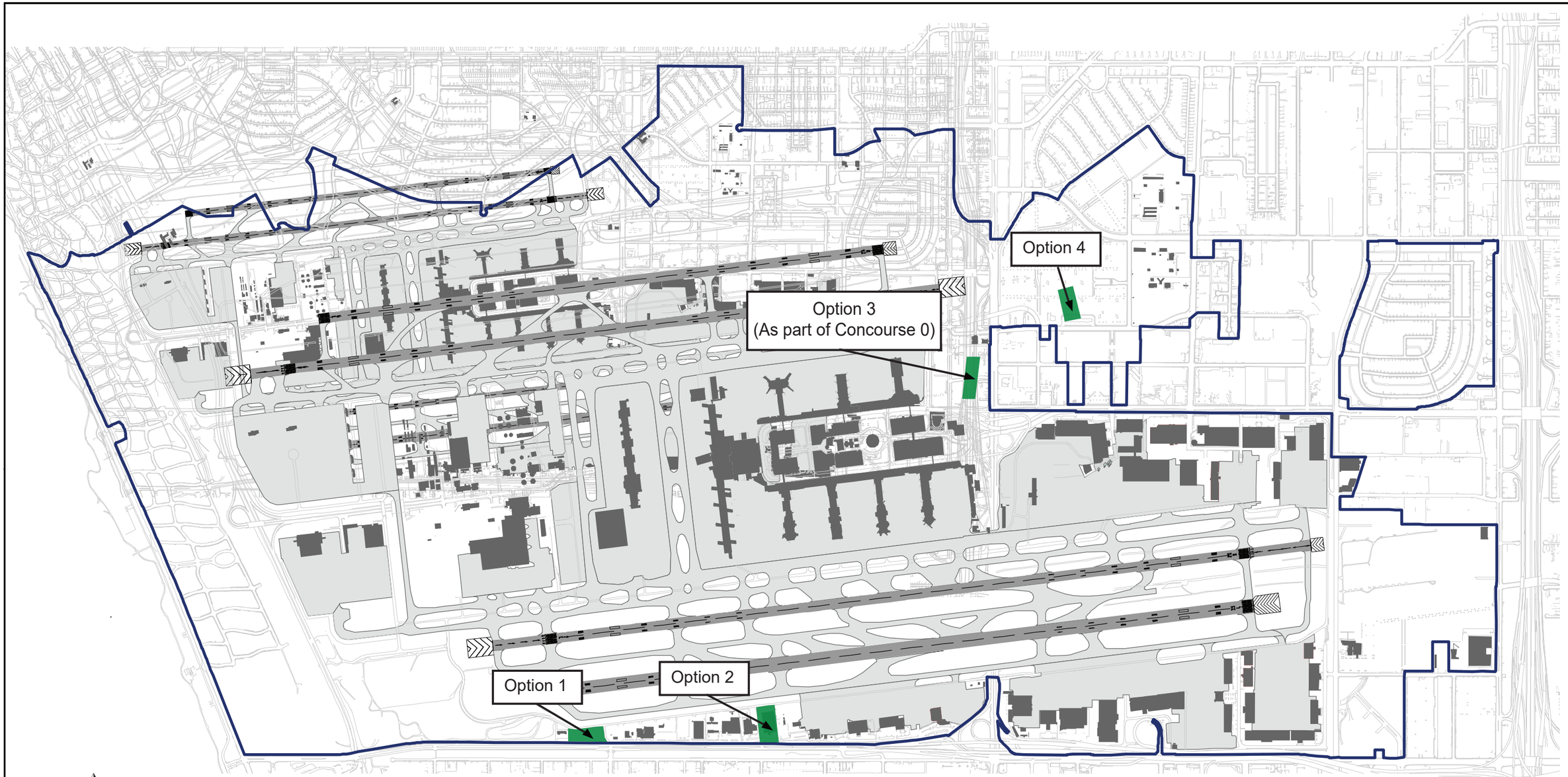
1. Various colors used only to differentiate between enabling project sites.
2. Monitoring wells and/or remediation equipment are located throughout the site.
3. Only a portion of the entryway pylons would be relocated. Individual pylons are not identified on the figure.

LAX Airfield and Terminal Modernization Project

Enabling Projects for Concourse 0, Terminal 9, and Landslide Improvements

Figure **2-26b**

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Sources: Ricondo & Associates, Inc., April 2020 (basemap); Los Angeles World Airports, January 2020 (Airport Layout Plan); CDM Smith, April 2020 (Airport Property Line); Ricondo & Associates, Inc., October 2018 (Project Elements); CF Wright Consulting, July 2020 (Roadway Elements)

Prepared by: CDM Smith, October 2020

LAX Airfield and Terminal Modernization Project	Enabling Project Relocation - Southwest Airlines GSE Facility Potential Relocation	Figure **2-27**

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In some cases, the removal or relocation of uses that currently exist within the Project footprint is already planned and/or approved to occur independently from the proposed Project; these removals and relocations would occur prior to and/or separately from the proposed Project. The projects that have independent utility from the proposed Project include the following and are identified on Figures 2-26a and 2-26b with a numeric, rather than alpha, designation:

- Relocation of LAWA Airfield Bus Facility (relocation of operation is an approved, independent project; facility demolition is part of the proposed Project, as identified on Table 2-4)
- Decommissioning of the LAX-it pickup lot (site demolition is part of the proposed Project, as identified on Table 2-4; decommissioning does not require approval as the lot was intended to be a temporary operation during construction activity in the CTA)
- Demolition of Sky Way/96th Street Bridge and Vicksburg Avenue (demolition approved as part of the LAX Landside Access Modernization Program)
- Relocation of LAWA Airport Police Department facilities (relocation of operation is an approved, independent project; facility demolition is part of the proposed Project, as identified on Table 2-4)
- Demolition of former Reliant Medical Facility (demolition approved as part of the LAX Landside Access Modernization Program)
- Relocation of Delta Air Lines Hangar Complex (relocation of operation and demolition of facility approved as part of the LAX Landside Access Modernization Program; construction of replacement facility approved as part of the LAX West Aircraft Maintenance Area Project)
- Relocation of Mercury Air Cargo Facility (relocation of operation would occur upon expiration of lease and is an independent project; facility demolition is part of the proposed Project, as identified on Table 2-4)
- Acquisition and/or displacement of several billboards (approved as part of the LAX Landside Access Modernization Program)
- Relocation of operations currently at the American Eagle Commuter Facility to the approved Midfield Satellite Concourse, which would occur in conjunction with completion of the south concourse (relocation of operations is an independent project; facility demolition is part of the proposed Project, as identified on Table 2-4)

2.5.2 Property Acquisition

As described in **Table 2-5** and identified on Figure 2-26b, a number of properties would need to be acquired to enable development of the proposed landside (roadway) improvements:

- Los Angeles Community College District Property - A Los Angeles Community College District property is located east of Sepulveda Boulevard between 96th Street and 98th Street. The property is improved with two airplane hangars that West Los Angeles College currently uses for the warehousing of movie set props and for instruction to support its Film/Television Production Crafts program. One course per quarter currently takes place at this facility. The majority of the site is leased to a private parking operator. As part of the proposed Project, the edges of the Los Angeles Community College District property would be acquired outright or through permanent or temporary construction easements. The existing structures along the southern edge of the property would be removed for the proposed roadway improvements. The main warehouse facility in the middle of the site would not be acquired and access to 96th Street would be maintained, allowing the facility to continue to be used for its current purposes.

- Commercial Parking Lot - WallyPark Express operates a commercial parking lot located north of the Los Angeles Community College District property and south of 96th Street. As part of the proposed Project, the existing parking lot would be acquired and the structure at the northwest corner of the property would be removed.
- LADWP Parcel - The property located on the east side of Vicksburg Avenue north of 96th Street is owned by LADWP. The southern two-thirds (approximately) of the property (i.e., the area south of the electrical substation) is leased for private parking. As part of the proposed Project, this portion of the property would be acquired.
- Commercial Parking Lot - Sunrise LAX Airport Parking operates a parking lot and shuttle operation that is located between 96th Street and 98th Street and east of the LADWP parcel. As part of the proposed Project, the existing property would be acquired and the small structure on the southern edge of the site would be removed.

Details regarding these acquisition properties are provided in Table 2-5.

Table 2-5
Properties to be Acquired

Reference Number[1]	Primary Use	Address(es)	Lot Area (Acres)	Zoning	Assessor's Parcel Number	Full or Partial Acquisition
30	Los Angeles Community College District - site houses airplane hangars used for warehouse/ instructional purposes	9700 S. Sepulveda Boulevard	2.06[2]	Commercial C2-2	4124026900	Partial
31	Commercial parking lot	9600 S. Sepulveda Boulevard[3]	1.47	LAX	4124025049	Full
32	LADWP parcel used for commercial parking	9750 S. Vicksburg Avenue[4]	0.62[5]	LAX	4124027900	Partial
33	Commercial parking lot	6155 W. 98th Street	1.00	LAX	4124027029	Full
		6206 W. 96th Street	0.13	LAX	4124027032	Full
		6200 W. 96th Street	0.13	LAX	4124027031	Full

Source: City of Los Angeles, ZIMAS, 2019, CF Wright and CDM Smith, 2020.

Notes:
1 Reference numbers correspond to enabling project numbers on Figure 2-26b.
2 Area of full parcel is 4.82 acres; only partial acquisition would be required.
3 Other addresses associated with this property are 6250 - 6286 W. 96th Street.
4 Other address associated with this property is 6175 W. 98th Street.
5 Area of full parcel is 0.98 acre; only partial acquisition would be required.

2.5.3 Easements and Acquisition for Roadway Improvements

The proposed roadway improvements identified in Section 2.4.3 would require the construction of new driveways, curb cuts, and ramps. These improvements would require easements or property

acquisition. LAWA would utilize easements and partial takes to the extent feasible to minimize any acquisition required. **Table 2-6** identifies properties that may be affected.

Table 2-6
Property Acquisition and/or Easements Related to Roadway Improvements

Property Address	Lot Area (acres)	Zoning	APN
9600 S. Sepulveda Boulevard[1,2]	1.47	LAX	4124025049
9700 S. Sepulveda Boulevard[1]	4.82	C2-2	4124026900
9800/9808 S. Sepulveda Boulevard	0.62	C2-2	4124026002
9860 S. Sepulveda Boulevard[3]	4.68	[Q]C2-2	4124026011
9750 S. Vicksburg Avenue[1,4]	0.62	LAX	4124027900
6206 W. 96th Street[1]	0.13	LAX	4124027032
6200 W. 96th Street[1]	0.13	LAX	4124027031
6144 W. 98th Street	1.44	C2-2	4124030023
6155 W. 98th Street[1]	1.00	LAX	4124027029
6200 W. 98th Street	2.47	[Q]C2-2	4124026010
6101 W. Century Boulevard	5.71	C2-2	4124030036
6151 W. Century Boulevard	1.81	C2-2	4124030029
6161 W. Century Boulevard[5]	1.76	C2-2	4124030034
6171 W. Century Boulevard	0.79	C2-2	4124030035

Source: City of Los Angeles, ZIMAS, 2019.

Notes:
1 Also identified as an acquisition property in Table 2-5.
2 Other addresses associated with this property are 6250 - 6286 W. 96th Street.
3 Other addresses associated with this property are 6211-6255 W. Century Boulevard.
4 Other address associated with this property is 6175 W. 98th Street.
5 Other addresses associated with this property are 6180 W. 98th Street, 6176 W. 98th Street, 9800 S. Vicksburg Avenue, 9850 S. Vicksburg Avenue.

2.6 Construction

2.6.1 Phasing

Figure 2-28 shows the development phasing for the proposed Project, broken down into the four major elements: North Airfield Improvements, Concourse 0, Terminal 9, and Roadways System (Landside) Improvements.

As shown in Figure 2-28, development of the North Airfield improvements would begin around late-2021 with initiation of the enabling projects for the Taxiway D westerly extension. As each enabling project is completed, construction of the taxiway improvements would occur along those segments and would generally continue in that manner through completion in mid-2026.

Development of Concourse 0 would begin around late-2022 with initiation of enabling projects and construction activities for the eastern portion of the concourse and apron, followed by completion of enabling projects in late-2024, and completion of Concourse 0 construction around late-2026.

Terminal 9 development activities would begin around late-2021 or early-2022 within initiation of the enabling projects that would continue through approximately mid-2024. Construction of Terminal 9 and the associated apron would begin approximately late-2023 and is anticipated to be completed around late-2027. Construction of the Taxiway C extension and relocation of the vehicle service road would begin in approximately late-2024 and be completed around late-2026.

Construction of the roadway system improvements would begin around early-2022 with initiation of improvements to/along Sepulveda Boulevard and continue on an on-going basis through the different areas of the roadway system to completion in early 2028. In conjunction with construction of the proposed roadway system improvements, there would be some temporary detours and rerouting of traffic onto other existing streets nearby or onto newly construction temporary access roads. The details of such temporary rerouting of traffic would be determined in conjunction with development of Maintenance of Traffic (MOT) plans as part of construction plans for the individual roadway segments.

It is anticipated that the majority of construction activities within each phase of development would occur during daytime hours (i.e., typically between 7:00 a.m. and 3:30 p.m.). It is likely that there could be some limited periods when construction activities are scheduled to occur both during the daytime and nighttime hours, as second and third shifts, in order to conduct work activities that cannot normally be accomplished during the daytime shift (e.g., during large-scale pours of concrete when it would be necessary to maintain a continuous stream of concrete deliveries through multiple shifts, or when it is safer and more efficient to complete airfield improvement work late at night when aircraft activity levels are very low).

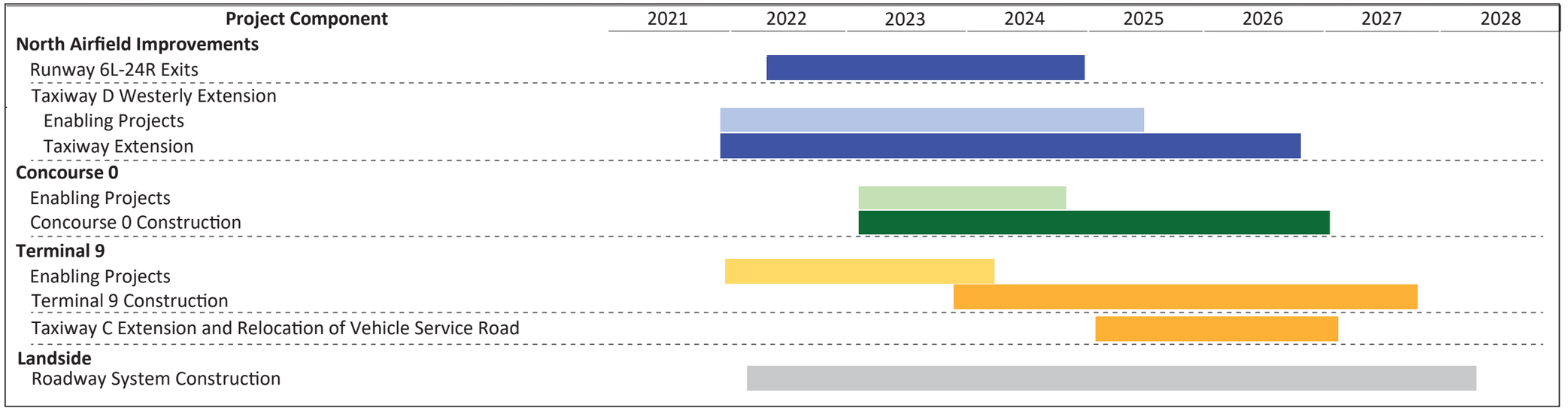
2.6.2 Construction Staging and Contractor Parking

Construction staging areas are identified in **Figure 2-29**. To the extent possible, construction laydown, staging areas, and employee contractor parking for the proposed Project would be located adjacent to or within the construction sites for the proposed facilities.

At each construction staging area, LAWA would implement, as necessary, security fencing, surveillance cameras, security personnel, and the locking and securing of equipment. Additionally, the proposed Project would incorporate various temporary construction fencing features to screen much of the construction activities along major public approach and perimeter roadways. Construction employees could be shuttled between construction sites and construction employee staging/parking areas, if/as warranted.

Construction activities and staging for the proposed Project would be coordinated with LAWA's Coordination and Logistics Management (CALM) Team. The CALM Team helps monitor and coordinate the construction logistics of development projects at LAX in the interest of avoiding conflicts between ongoing airport operations and construction activities. In accordance with standard LAWA practice, the CALM Team would ensure that occupancy and operation of adjacent and surrounding facilities would be maintained throughout demolition and construction activities.[25]

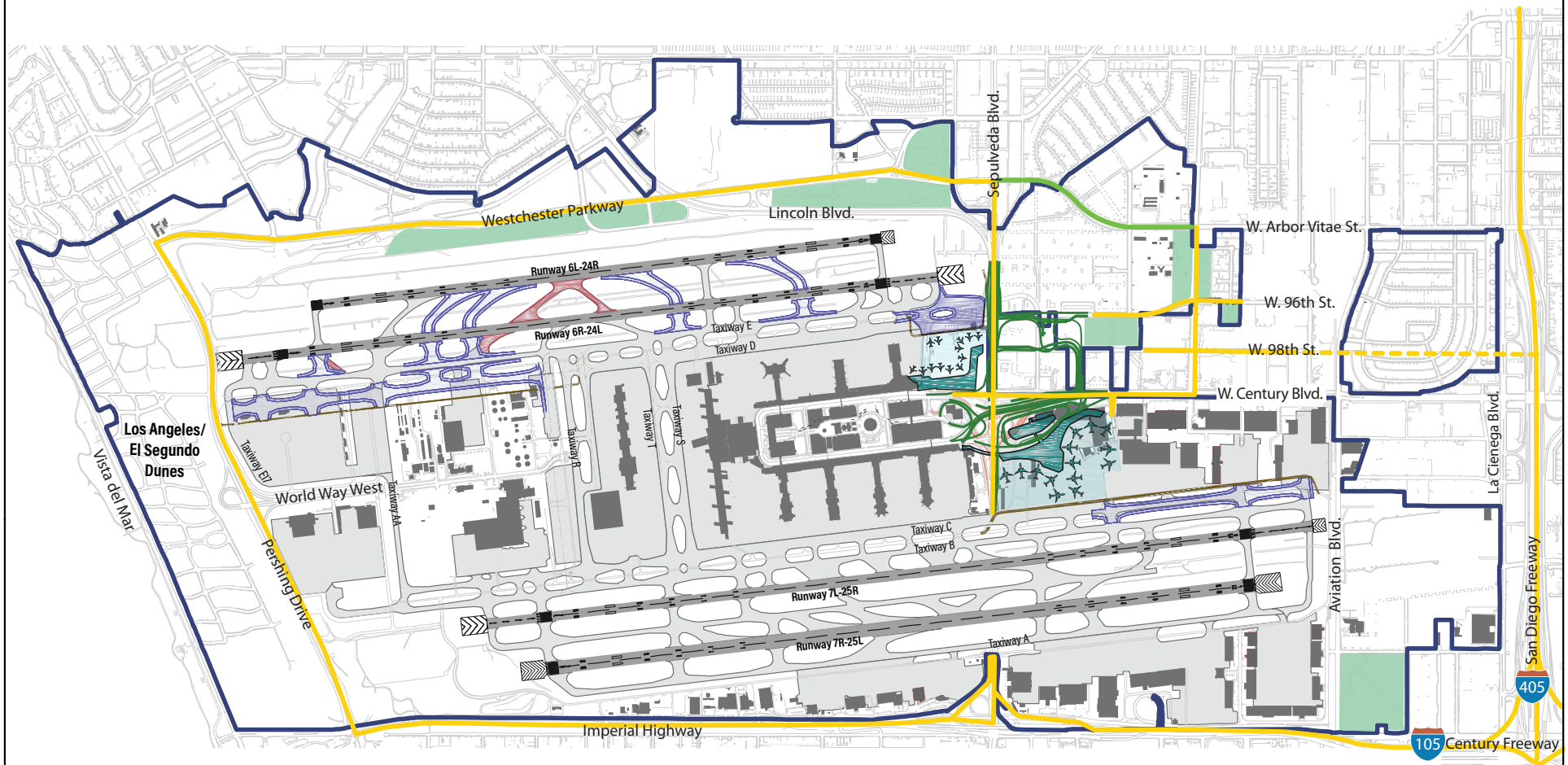
[25] City of Los Angeles, Los Angeles World Airports, *2020 Design and Construction Handbook (DCH), Version 1.0,* June 30, 2020. Available: https://www.lawa.org/en/lawa-businesses/lawa-documents-and-guidelines/lawa-design-and-construction-handbook.



Source: Connico, Inc., 2019; CDM Smith, October 2020
Prepared by: CDM Smith, October 2020

LAX Airfield and Terminal Modernization Project	Construction Phasing	Figure **2-28**

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Legend

- LAX Property Boundary
- Airfield Improvements
- Terminal and Related Improvements
- Taxiway to be Removed or Decommissioned
- Vehicle Service Road
- Roadway Improvements
- Roadway to be Demolished
- Potential Construction Staging Areas
- Construction Haul Routes
- Future LAX Landside Access Modernization Program I-405 Connection
- Alternate Construction Haul Route

0 1,500 3,000 Feet

Scale

Sources: Ricondo & Associates, Inc., April 2020 (basemap); Los Angeles World Airports, January 2020 (Airport Layout Plan); CDM Smith, April 2020 (Airport Property Line); Ricondo & Associates, Inc., October 2018 (Project Elements); CF Wright Consulting, July 2020 (Roadway Elements)

Prepared by: CDM Smith, September 2020

LAX Airfield and Terminal Modernization Project

Construction Staging Areas and Haul Routes

Figure 2-29

2.6.3 Construction Haul Routes

Designated delivery and haul routes would be established for the proposed Project consistent with the haul routes currently used for LAX projects. Figure 2-29 delineates the delivery and haul routes proposed to be used during construction of the proposed Project. As shown, the primary delivery routes would utilize I-405, I-105, Sepulveda Boulevard, Pershing Drive, and Westchester Parkway. For materials delivered to, and stored at, designated construction staging areas, the contractor haul routes to and from the Project site would generally be on public streets.

As required by the Los Angeles Department of Building and Safety, LAWA would submit a Haul Route Form and Haul Route Map, as shown on Figure 2-29, identifying routes to be used by trucks to export soil or demolition debris off-site. In addition, in accordance with LAWA procedures, a Site Logistics Plan that identifies construction access and ingress/egress, staging/laydown, etc. would be submitted to the CALM Team.[26]

2.6.4 Temporary Runway Closures During Construction

Construction of the proposed airfield improvements would require a temporary short-term closure of each runway in the north airfield (i.e., Runway 6L-24R and Runway 6R-24L), which would be staggered to allow one runway to remain operational while the other is closed. Each of the two runway closures would be for approximately 4.5 months and occur between January and May, when the travel season is typically light and aircraft activity levels are generally lower than during the rest of the year. It is anticipated that temporary closure of Runway 6L-24R would occur in 2023 and temporary closure of Runway 6R-24L would occur in 2024. During the time of each runway closure, flights would be redistributed among the three runways that remain in operation (i.e., the two runways in the south airfield and the runway in the north airfield that is not closed).

2.6.5 Temporary Access During Construction

During construction of the proposed roadway system improvements described above in Section 2.4.3, provisions would be made for temporary access to the CTA and to Terminal 9, as described below.

2.6.5.1 CTA Access

Demolition/removal of the Sky Way/96th Street Bridge roadway system, which is an enabling project associated with the LAX Landside Access Modernization Program, would occur in the early phases of Project construction, in a timeframe similar to the development of the Concourse 0 site and construction of the new flyover ramp from southbound Sepulveda Boulevard to the new elevated roadway system that leads to the CTA. The demolition would include removal of the Sky Way bridge from 96th Street to the CTA and removal of the remaining portions of Sky Way including the southbound ramps from Sepulveda Boulevard into the CTA and the northbound lanes out of the CTA to 96th Street. Other existing access routes to and from the CTA would remain in operation during Project construction, including those on Century Boulevard and Sepulveda Boulevard. Such existing access routes on Sepulveda Boulevard include the CTA entrance ramps from northbound Sepulveda Boulevard just north of the Sepulveda Tunnel, the CTA entrance point from southbound Sepulveda Boulevard at "Little Century" (i.e., the westerly continuation of Century Boulevard past Sepulveda Boulevard), and the CTA exit ramps onto southbound Sepulveda Boulevard near the Sepulveda Tunnel.

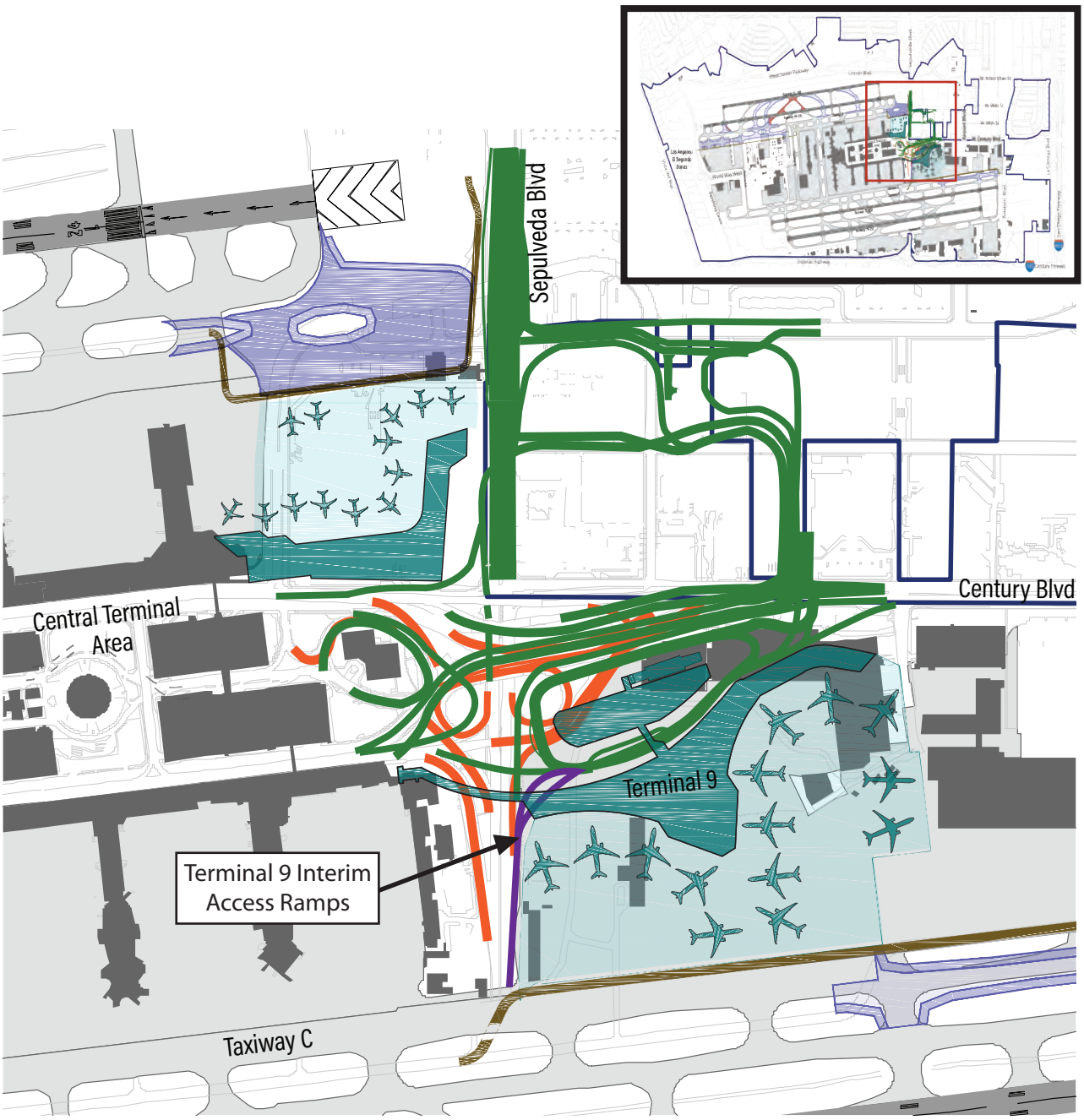
[26] City of Los Angeles, Los Angeles World Airports, *2020 Design and Construction Handbook (DCH), Version 1.0,* Section 4 – Guide Specifications, Division 01 – General Requirements, June 30, 2020. Available: https://www.lawa.org/en/lawa-businesses/lawa-documents-and-guidelines/lawa-design-and-construction-handbook.

Following demolition of the Sky Way roadway system, the primary focus would be on rerouting inbound traffic, as that represents the majority of traffic using the Sky Way roadway system. Following demolition of the Sky Way bridge and the Sky Way ramps from southbound Sepulveda Boulevard, motorists that would normally use those routes to come into the CTA would instead be assigned to, or encouraged to utilize, the ITF West and ITF East and take the APM into the CTA. The ITFs, along with the related roadway network improvements, and the APM would be completed and operational before demolition of the Sky Way roadway system. This would also include the reassignment of certain transportation modes (e.g., TNCs such as Uber and Lyft, shuttles, buses) from the CTA to the ITFs. Privately-owned vehicles that would normally travel on southbound Sepulveda Boulevard to access the CTA, the majority of which use the Howard Hughes Parkway exit from southbound I-405 to get onto Sepulveda Boulevard, would be redirected to use other exits such as La Tijera, La Cienega (Manchester Parkway), 98th Street (at La Cienega), and Century Boulevard. The rerouting of traffic would be assisted by the use of real-time/dynamic Traffic Access Management Systems including permanent and portable changeable message signs and a signage program. The redirected traffic would be routed to the ITFs, including primarily the ITF West, via the local roadway system including, but not limited to, Westchester Parkway/Arbor Vitae, Jetway Boulevard, Jenny Avenue, Airport Boulevard, 94th Street, 96th Street, and 98th Street. Improvements made to the local roadway system to help route and distribute that traffic would include some restriping of roads to provide necessary lane controls and signalization improvements at some intersections.

For outbound traffic that normally uses the Sky Way roadway system when exiting the CTA, such traffic would be redirected to other existing exit routes from the CTA. Specifically, such outbound traffic would be routed within the CTA to either Center Way or World Way South, which provide the ability to continue east onto Century Boulevard and to ramps connecting to northbound Sepulveda Boulevard and southbound Sepulveda Boulevard.

2.6.5.2 Terminal 9 Access

Landside access proposed for Terminal 9 includes various ramps and roadway segments that integrate into the overall proposed LAX Airfield and Terminal Modernization Program Phase 1 roadway system. Construction of certain of those ramps and segments is anticipated to occur in the latter phases of developing the overall LAX Airfield and Terminal Modernization Program roadway system, which would be subsequent to the anticipated completion of Terminal 9. As such, temporary roadway improvements are proposed to provide interim access to Terminal 9. Specifically, two ramps are proposed to be developed from northbound Sepulveda Boulevard, just north of the Sepulveda Tunnel, with one ramp going to the departures level curb outside Terminal 9 and the other ramp going to the arrivals level curb outside Terminal 9. **Figure 2-30** depicts the location of the subject ramps.



Legend

- Terminal 9 Interim Access Ramps
- LAX Property Boundary
- Airfield Improvements
- Terminal and Related Improvements
- Vehicle Service Road
- Roadway Improvements
- Roadway to be Demolished

0 450 900 Feet

Scale

Sources: Ricondo & Associates, Inc., April 2020 (basemap); Los Angeles World Airports, January 2020 (Airport Layout Plan); CDM Smith, April 2020 (Airport Property Line); Ricondo & Associates, Inc., October 2018 (Project Elements); CF Wright Consulting, July 2020 (Roadway Elements)

Prepared by: CDM Smith, October 2020

LAX Airfield and Terminal Modernization Project	Interim Access Ramps to Terminal 9	Figure **2-30**

2.7 Entitlements

As further discussed in Section 4.6, *Land Use and Planning*, the primary land use plans applicable to the proposed Project include the LAX Plan, LAX Specific Plan, SCAG's 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy (Connect SoCal), the Los Angeles County Airport Land Use Plan, and the City of Los Angeles' Mobility Plan 2035. In addition, the proposed landside access improvements are located within an area governed by the Westchester-Playa del Rey Community Plan and the Coastal Transportation Corridor Specific Plan. Improvements on and adjacent to Century Boulevard would also be governed by the Century Boulevard Streetscape Plan.

The proposed Project components are consistent with the City of Los Angeles General Plan, including the LAX Plan and the Westchester-Playa del Rey Community Plan, and LAX Specific Plan zoning regulations. Therefore, no plan amendments or discretionary zoning actions are required to permit development of the proposed airside, landside, or terminal improvements. Additionally, some of the landside improvements would require approval to effect public street vacations and public street easements. LAWA would be required to satisfy specific conditions tied to these public street approvals, including but not limited to, the construction of curbs, gutters, sidewalks, and stormwater drainage.

2.8 Intended Uses of this EIR

Implementation of the proposed Project would require approvals from and consultation with federal, state, and regional/local agencies. The EIR will be used by the agencies identified below in connection with permits and approvals necessary for the construction and operation of the proposed Project. Federal, state, and regional/local agency actions required for the construction and operation of the proposed Project will include those described below.

This EIR will be used primarily to (1) inform decision-makers and the public about the potentially significant environmental effects of the proposed Project and the ways to avoid or reduce the significant environmental effects to the extent feasible; (2) demonstrate to the public that the environment is being protected; and (3) ensure that the planning and decision-making processes reflect an understanding of the environmental effects of the proposed Project.

In addition to use of this EIR by LAWA and the City of Los Angeles City Council and Planning Commission, the proposed Project requires various federal, state, and local agency approvals. CEQA requires that all state and local agencies consider the environmental consequences of projects over which they have discretionary authority. These agencies may use this EIR in their respective decision-making and approval processes, and federal agencies may use information in this EIR when conducting NEPA reviews. CEQA further requires that the EIR project description include a list of agencies that are expected to use the EIR in their decision-making, a list of permits and other approvals required to implement the Project, and a list of related environmental review and consultation requirements required by federal, state, or local laws, regulations, or policies (State CEQA Guidelines Section 15124(d)(1)). The federal, state, and local permits, approvals, and reviews that may be needed to implement the proposed Project include:

2.8.1 Federal Actions[27]

- FAA determinations under 49 U.S.C. §§ 47106 and 47107 relating to the potential eligibility of the Proposed Action for federal funding under the Airport Improvement Program (AIP)

[27] Although FAA is not a state agency regarding CEQA review, the proposed Project would require various approvals in consideration of FAA requirements.

and/or under 49 U.S.C. § 40117, as implemented by 14 CFR § 158.25, to impose and use passenger facility charges (PFCs) collected at LAX for the proposed Project to assist with construction of potentially eligible development items shown on the ALP

- FAA approval of a construction safety and phasing plan to maintain aviation and airfield safety during construction pursuant to FAA Advisory Circular 150-5370-2G, Operational Safety on Airports During C*onstruction*,[28] under 14 CFR 139 (49 U.S.C. § 44706)
- FAA determinations under 14 C.F.R. Part 77 regarding the safe and efficient use of airspace

2.8.2 State and Regional Actions

- Caltrans review and approval for Sepulveda Boulevard-area improvements, and crossing of Sepulveda Boulevard by the proposed pedestrian corridor
- Caltrans review and approval of an Airport Permit, required by California Public Utilities Code Section 21661.6(a), for any expansion of an existing airport
- SCAQMD and SCAG review for proposed Project conformity with the State Implementation Plan under the Clean Air Act
- SCAQMD authorities to construct and permits to operate for stationary sources
- State Water Resources Control Board (SWRCB) and/or Los Angeles Regional Water Quality Control Board (LARWQCB)[29] permits or approvals, which may include: (1) General Construction Stormwater Permit, (2) Standard Urban Stormwater Mitigation Plan, (3) Industrial Stormwater General Permit, and (4) approval of a Recycled Water Report for the use of recycled water as a dust control measure for construction

2.8.3 Local Actions

- LAWA Board of Airport Commissioners – Certification of EIR, Project approval, and LAX Plan Compliance determination pursuant to LAX Specific Plan Section 7
- City of Los Angeles Department of Building & Safety (LADBS) – Grading permits, building permits, and other permits issued by LADBS for the Project and any associated Department of Public Works permits for infrastructure improvements
- Los Angeles Department of Transportation compliance with the Coastal Transportation Corridor Specific Plan
- City of Los Angeles Department of City Planning – Compliance with the Century Boulevard Streetscape Plan; land acquisition, reconfiguration of parcels, and zoning change approvals
- City of Los Angeles Department of Public Works, Bureau of Engineering – Street and public easement approvals and conditions, including vacations of public rights-of-way
- County of Los Angeles Airport Land Use Commission review to determine whether the Project is consistent with the County's Airport Land Use Plan
- City Council – Approval of Project
- Other local approvals, permits, or actions that may be deemed necessary for the Project

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[28] U.S. Department of Transportation, Federal Aviation Administration, *Advisory Circular (AC) 150-5370-2G, Operational Safety on Airports During Construction*, December 13, 2017. Available: https://www.faa.gov/documentLibrary/media/Advisory_Circular/150-5370-2G.pdf.

[29] The SWRCB and nine RWQCBs administer regulations regarding water quality in the State.

3. OVERVIEW OF PROJECT SETTING

3.1 Introduction

This chapter provides an overview of the existing land use, environmental, and development setting relevant to the proposed Project. More detailed descriptions of the existing setting specific to each of the environmental topics evaluated in this EIR are provided within their respective sections in Chapter 4, *Environmental Impact Analysis*. This chapter also describes other projects at and immediately adjacent to LAX that may, in conjunction with the proposed Project, result in cumulative impacts to the environment.

3.2 Land Use Setting

As discussed in Chapter 2, *Description of the Proposed Project*, the proposed Project improvement sites (hereafter referred to as the Project improvement sites or, collectively, the Project site in this EIR) are located within the northern and eastern portions of LAX (see Figure 2-4 in Chapter 2). These sites consist of highly-developed land within and adjacent to a busy international airport. The land use setting around the Project improvement sites is characterized by airport operations with commercial uses along Sepulveda Boulevard and Century Boulevard, and a Los Angeles Community College District property,[1] vehicle parking (surface and structured parking), hotels, and an office building along 96th Street, 98th Street, and Vicksburg Avenue. West of the Project site (i.e., west of the western end of the airfield improvements) are Pershing Drive and the adjacent Los Angeles/El Segundo Dunes, a designated Ecologically Sensitive Habitat Area (ESHA),[2] and beyond the Dunes is the Pacific Ocean.

The proposed airfield improvements are situated within a portion of the airport that includes paved airfield areas, airfield access roadways, remote aircraft gates, and other aviation-related uses, such as maintenance facilities and fuel storage facilities. The Concourse 0 site is currently occupied by LAX-it, a temporary passenger pickup area for taxis and transportation network companies (TNCs like Uber and Lyft).[3] The site also houses a groundwater remediation system and associated monitoring wells and equipment to address past contamination beneath the site. The Terminal 9 site encompasses existing air cargo and maintenance facilities (some of which have been recently decommissioned), aircraft parking spaces, the LAX Records Retention Building, and an American Eagle commuter passenger terminal. The proposed landside improvements would be located in proximity to several hotels (Hyatt Regency Los Angeles, H Hotel/Homewood Suites, Courtyard by Marriott), an office building, surface and structured parking facilities, and the Los Angeles Community College District property. Also within the vicinity of the Project site is the entrance to LAX, located at World Way and Sepulveda Boulevard.

The Los Angeles International Airport Plan (LAX Plan), the City of Los Angeles General Plan Land Use Element that governs uses on LAX, designates various components of the proposed Project as Airport

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1 The Los Angeles Community College District property houses two airplane hangars that West Los Angeles College currently uses for the warehousing of movie set props and for instruction to support its Film/Television Production Crafts program. Per the West Los Angeles College Spring 2020 and Summer 2020 course schedules, only one course per quarter currently takes place at the facility. Film Production 110-Set Dressing Crafts was offered two days per week for eight weeks during Spring 2020 and four days per week for four weeks during Summer 2020, as indicated at http://www.wlac.edu/WLAC/media/documents/new-sis/Spring.pdf and http://www.wlac.edu/WLAC/media/documents/new-sis/Summer.pdf (Fall 2020 classes are offered online only due to COVID-19.) In past years, a second, one-week vocational education course has been offered periodically.

2 The Los Angeles/El Segundo Dunes has been designated Significant Ecological Area No. 28 (SEA No. 28) by Los Angeles County. Additionally, the Los Angeles/El Segundo Dunes has been designated as an ESHA pursuant to Section 30240 of the California Coastal Act.

3 LAX-it provides an auxiliary curb that reduces traffic congestion in the Central Terminal Area (CTA) by providing an alternative area for passenger pick-up during construction of the LAX Landside Access Modernization Program.

Airside or Airport Landside.[4,5] The corresponding LAX Specific Plan designates these areas as LAX Zone: Airport Airside Subarea and LAX Zone: Airport Landside Subarea.[6]

3.3 Environmental Setting

This section provides an overview of the existing environmental setting related to the proposed Project and the topical issues evaluated in Chapter 4, *Environmental Impact Analysis*, of this EIR. Additional contextual setting information regarding the novel coronavirus COVID-19 is provided in the EIR preamble. Additional information regarding existing conditions for these topics is provided in Chapter 4 of this EIR.

3.3.1 Air Quality

As discussed further in Section 4.1, *Air Quality and Human Health Risk,* and **Appendix C** of this EIR, the Project site is located within the South Coast Air Basin, a 6,745-square-mile area encompassing all of Orange County and the urban, non-desert portions of Los Angeles, Riverside, and San Bernardino Counties. The South Coast Air Basin is under the jurisdiction of the South Coast Air Quality Management District (SCAQMD). At the federal level, the South Coast Air Basin is designated as a nonattainment area for ozone (O_3), fine particulate matter ($PM_{2.5}$), and lead (Pb).[7] At the State level, the South Coast Air Basin is designated as nonattainment for O_3, respirable particulate matter (PM_{10}), and $PM_{2.5}$.[8] The existing air quality setting in the immediate vicinity of the Project site is dominated by air pollutants from aircraft activities, including landings and take-offs, taxiing, and other aircraft movements; vehicles on airport roads and surrounding roads and highways; and industrial uses. Other sources of existing air pollutant emissions on the airport include the Central Utility Plant (CUP), power generators, ground support equipment (GSE), and operations and maintenance activities.

3.3.2 Cultural Resources (Historical Resources)

As discussed further in Section 4.2, *Cultural Resources (Historical Resources),* and **Appendix D** of this EIR, the Project area contains four properties that have been identified as eligible for listing as historic resources at the national, state, and/or local level. None of these properties is located within the Project improvement sites; however, the potential for the Project to result in indirect impacts to these resources is examined in this EIR. The four properties are:

- 1961 Airport Traffic Control Tower (ATCT) at the eastern end of the CTA (eligible for local listing as a City of Los Angeles Historic-Cultural Monument)
- McCulloch Building (now H Hotel/Homewood Suites) at 6151 W. Century Boulevard (eligible for the California Register of Historical Resources and local listing as a City of Los Angeles Historic-Cultural Monument)

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4 City of Los Angeles, Department of City Planning, *Los Angeles International Airport - LAX Plan*, adopted December 14, 2004, last amended June 7, 2017. Available: https://www.lawa.org/-/media/lawa-web/lawa-our-lax/plan-and-ordiance/2017-lax-plan.ashx?la=en&hash=A56B9B036C9CC63428A4AC5DC0E910992C1B0F53.

5 Airports are generally divided into landside and airside areas. Landside areas are accessible to the public and include roadway networks, parking lots, rental car operations, and public transportation facilities. Airside areas are restricted areas with access only to authorized personnel and ticketed passengers that have undergone security screening; airside areas include passenger handling facilities, runways, taxiways, apron areas, and service roads.

6 City of Los Angeles, Department of City Planning, *Los Angeles International Airport (LAX) Specific Plan*, adopted December 14, 2004, last amended September 8, 2017. Available: https://lawamediastorage.blob.core.windows.net/lawa-media-files/media-files/lawa-web/lawa-our-lax/our-lax/17-0276-s2_ord_185164_10-28-17.pdf.

7 U.S. Environmental Protection Agency, *Green Book Nonattainment Areas*. Available: https://www.epa.gov/green-book, accessed October 2019.

8 California Air Resources Board, *Area Designations Maps/State and National.* Available: https://ww2.arb.ca.gov/resources/documents/maps-state-and-federal-area-designations, accessed October 2019.

- Union Savings and Loan Building at 9800 S. Sepulveda Boulevard (eligible for the California Register of Historical Resources and local listing as a City of Los Angeles Historic-Cultural Monument)
- Former Aircraft School Building located on the Los Angeles Community College District property at 9700 S. Sepulveda Boulevard (eligible for the National Register of Historic Places, the California Register of Historical Resources, and local listing as a City of Los Angeles Historic-Cultural Monument)

Of these properties, only the 1961 ATCT is located on LAWA property. The other resources are located on private property.

3.3.3 Energy

As discussed further in Section 4.3, *Energy,* of this EIR, electrical power within the City of Los Angeles, including LAX, is supplied by the City of Los Angeles Department of Water and Power (LADWP). Electricity provided by LADWP is generated by LADWP and other power generating facilities located both within the Los Angeles region and in other areas. In addition to these sources, the LAX CUP, which is located in the CTA, provides air-conditioning and heating to the airport terminals and other airport buildings in the CTA. The CUP houses a co-generation system that generates electrical power that offsets the electrical load required for plant operation; excess electricity generated by the CUP is sold to LADWP.

The Southern California Gas Company (SoCal Gas) supplies natural gas to nearly all of Southern and Central California, including the City of Los Angeles and LAX. Natural gas is transported from suppliers to SoCal Gas transmission facilities for distribution to their Southern California service areas by a network of high-pressure transmission lines.

A variety of transportation-related fuels are used at LAX. These include Jet A for aircraft, and gasoline, diesel, and alternative fuels for automobiles, trucks, shuttle buses, support vehicles, GSE, and stationary equipment such as emergency generators. In addition, passenger vehicle trips associated with the airport require fuel, mainly gasoline and diesel.

3.3.4 Greenhouse Gas Emissions

As discussed further in Section 4.4, *Greenhouse Gas Emissions,* of this EIR, the primary greenhouse gas (GHG) emission sources at LAX are emissions of carbon dioxide (CO_2) from combustion of fuels associated with aircraft operations, area traffic, and ongoing construction activities, as well as from building and lighting operations. Mobile and area sources and indirect emissions from energy and water use, wastewater, and waste management also contribute to GHG emissions in the Project vicinity.

3.3.5 Hazardous Materials

As further discussed in Section 4.5, *Hazardous Materials*, of this EIR, there are three existing known contamination/remediation sites within or adjacent to Project improvement sites. Sources of historical contamination at these sites include aircraft fueling systems (Terminal 1 Fuel Valve Vault site located in the vicinity of the easternmost runway exit improvements); aircraft maintenance activities, including the related underground storage of fuel and other substances (United Airlines Maintenance Operations Center at 6000-6024 Avion Drive, located adjacent to and east of the proposed Terminal 9 site); and manufacturing/industrial activities (former AlliedSignal/Honeywell site; the proposed location for Concourse 0). In addition, low levels of per- and poly-fluoroalkyl substances (PFAS) have been found in soil and groundwater in proximity to the proposed taxiway improvements associated with Concourse 0.

3.3.6 Noise

As further discussed in Section 4.7, *Noise,* and **Appendix F** of this EIR, the Project area is located within a developed, urbanized area consisting of airport, commercial, transportation, and residential land uses. The existing noise setting in the Project area is dominated by aircraft activities that occur throughout the day and evening, primarily involving commercial jets. These activities generate noise from aircraft arriving and departing on the north and south runway complexes and, to a lesser degree, aircraft movements on taxiways, and aircraft maintenance. Traffic noise from vehicles on-airport and on off-site area roadways and highways, as well as ongoing construction activities at LAX, also contribute to the existing noise setting within and around the Project area.

3.3.7 Transportation

As further discussed in Section 4.8, *Transportation,* and **Appendix G** of this EIR, the surface transportation setting in the Project area includes automobiles, consisting of a mix of private vehicles, buses, shuttles, taxis, TNCs, and limousines; LAWA vehicles; airline and airport employees, airport tenants, and deliveries; and employees and visitors of commercial, office, and other uses located along the Century Boulevard corridor. Two major freeways, Interstate 405 and Interstate 105 (I-405 and I-105, respectively), provide regional ground access to the Project area. Local traffic operates on the local roadway network, including Century Boulevard, Sepulveda Boulevard, Airport Boulevard, Aviation Boulevard, Lincoln Boulevard, Westchester Parkway, and Imperial Highway.

Facilities also exist or are planned/under construction to provide alternate forms of travel in the Project vicinity. The Metro Green Line runs near the southeastern boundary of LAX and includes the Metro Green Line Aviation/LAX Station at Aviation Boulevard/Imperial Highway. The Metro Green Line will connect to the future Metro Crenshaw/LAX Line, currently under construction along Aviation Boulevard, with a station at Aviation/Century Blvd. A future station along the Crenshaw and Green Lines is planned in the location bounded by Aviation, Arbor Vitae and 96th Street (referred to as the Airport Metro Connector Station). The Metro Crenshaw/LAX Line is projected to be completed and commence operations in 2021. Construction of the Airport Metro Connector Station is expected to be completed in 2023/24.

The approved LAX Landside Access Modernization Program includes several individual components that collectively will improve access to and from LAX. Key components include the following:

- Automated People Mover (APM) system
- Intermodal Transportation Facilities (ITFs)
- Consolidated Rental Car facility (CONRAC)
- Roadway improvements

The LAX APM, currently under construction, will transport passengers to and from the CTA. The already-approved APM system will include access points at the ITFs, the CONRAC, and the Airport Metro Connector Metro station. The APM system will allow the ITFs and CONRAC to serve as new points to access and exit LAX.

In addition to the future LAX and Metro facilities, as discussed in Section 4.8, *Transportation*, and illustrated in figures in that section, numerous bus lines operated by several transit agencies serve the current LAX City Bus Center on 96th Street between Vicksburg Avenue and Jenny Avenue and the Metro Green Line Aviation/LAX Station at Aviation Boulevard/Imperial Highway. Existing bicycle lanes in the Project area are located on W. 96th Street between Sepulveda Boulevard and Airport Boulevard, and

on Aviation Boulevard, Imperial Highway, and a portion of Westchester Parkway.[9,10] The main pedestrian connection to LAX is via the north side of Century Boulevard, which includes sidewalks and crosswalks between I-405 and the CTA.

3.3.8 Utilities

As further discussed in Section 4.9, *Utilities,* and **Appendix H** of this EIR, LADWP provides water services to most areas in the City of Los Angeles, including LAX. LAX is served by a trunk line in Sepulveda Boulevard that distributes water to transmission lines running along the airport perimeter. LAX also uses reclaimed water from the West Basin Municipal Water District's Edward C. Little Water Recycling Facility (ECLWRF). As addressed in Section 4.9.1, *Water Supply*, of this EIR, LAWA is partnering with LADWP and the City's Bureau of Sanitation (LASAN) to provide high-quality reclaimed water to LAX through the construction and operation of the Advanced Water Purification Facility (AWPF) at the Hyperion Water Reclamation Plant (HWRP), which will produce reclaimed water that will be conveyed to the CTA via a new pipeline connection in Pershing Drive. In addition, LAWA has implemented other measures to decrease potable water use at LAX.

LASAN is responsible for operating and maintaining the City's wastewater collection and treatment system. Sanitary wastewater generated by activities at LAX is treated at the HWRP, a City-owned treatment plant located adjacent to the southwest boundary of LAX, approximately two miles southwest of the CTA. Effluent from HWRP is discharged to the ocean or conveyed to the ECLWRF for further treatment and water reuse. The Hyperion AWPF, mentioned above, is one component of the City's plan to increase reuse of water from HWRP.[11]

3.4 Development Setting

This section identifies projects at and immediately adjacent to LAX that could, in conjunction with the proposed Project, result in cumulative impacts to the environmental resources addressed in this EIR. These projects are listed in **Table 3-1** and identified in **Figure 3-1** (two projects – Various Water Pipeline Projects and Miscellaneous Projects and Improvements – are not identified on the figure because they occur at multiple locations throughout the airport, as further described below). A description of each project is also provided in Table 3-1. The projects listed in Table 3-1 were considered in the cumulative impacts analysis for each resource analyzed in Chapter 4, *Environmental Impact Analysis*.

State CEQA Guidelines Section 15130(b) states that a discussion of cumulative impacts should include either:

a. A list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency, or

b. A summary of projections contained in an adopted local, regional or statewide plan, or related planning document, that describes or evaluates conditions contributing to the cumulative effect. Such plans may include a general plan, regional transportation plan, or plans for the reduction of greenhouse gas emissions. A summary of projections may also be contained in an adopted or certified prior environmental document for such a plan. Such projections may be supplemented with additional information such as a regional modeling program.

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9 City of Los Angeles, Department of City Planning, *Mobility Plan 2035 – An Element of the General Plan*, amended September 7, 2016. Available: https://planning.lacity.org/odocument/523f2a95-9d72-41d7-aba5-1972f84c1d36/Mobility_Plan_2035.pdf.

10 City of Los Angeles, *NavigateLA*. Available: https://navigatela.lacity.org/NavigateLA/.

11 City of Los Angeles, LA Sanitation & Environment and Department of Water and Power, *One Water LA 2040 Plan – Volume 2 Wastewater Facilities Plan*, *Final Draft,* prepared by Stantec in collaboration with Carollo, April 2018. Available: https://www.lacitysan.org/cs/groups/sg_owla/documents/document/y250/mdi2/~edisp/cnt026205.pdf.

For purposes of analyzing the proposed Project's cumulative impacts to air quality (including human health risk), cultural resources (historical resources), energy, noise, land use and planning, and utilities, the first approach, the list approach, was used. For purposes of analyzing the proposed Project's transportation impacts, a Project travel demand model was developed that is based on the City of Los Angeles Citywide Model (owned and maintained by the Los Angeles Department of Transportation (LADOT), which itself is based on the Southern California Association of Governments' (SCAG) Regional Transportation Plan (RTP) model. As described in Section 4.8, *Transportation,* SCAG's RTP model incorporates future growth projections. In accordance with guidance from the California Natural Resources Agency (CNRA),[12] GHG emissions are considered in the context of a cumulative impact, rather than a project impact. Therefore, the GHG analysis is inherently cumulative in nature and a separate cumulative impact analysis is not required.

Table 3-1
Projects At/Adjacent to LAX

	Project	Expected Dates	Description
1	LAX Northside Development	2016 – 2025	Under the approved LAX Northside Project, development of approximately 340 acres of land on the north side of the airport with up to 2,320,000 square feet of development to include recreation and open space; office, research, and development; community and civic; commercial; airport support; and landscape buffer. Near-term projects within LAX Northside include: ▪ Airport Police Facility (May 2019 – June 2021), which will relocate and consolidate LAWA Police Department facilities, including the police headquarters, shooting range, and canine facility ▪ Receiving Station X (Oct 2019 – May 2023), a new receiving station and installation of feeders to address power reliability issues, provide redundancy in the case of power outages, and accommodate the electrical demand of future infrastructure projects at LAX Area 2 and portions of Area 1, which are located north of Westchester Parkway between Pershing Drive and Loyola Boulevard, are expected to be developed between 2022 and 2025 with up to 901,500 net square feet of a variety of uses in accordance with applicable zoning and design guidelines. The timing for development of the remainder of the LAX Northside area has not been determined.
2	Terminals 2 and 3 Modernization Project	2017 – 2024	Approved improvements to Terminals 2 and 3, consisting of Terminal 2 concourse upgrades and additional floor area; Terminal 3 concourse demolition and reconstruction to provide additional concourse area and a new operation control center; demolition of the Terminal 3 satellite southern appendages; demolition and reconstruction of the passenger and baggage processing facilities (ticketing buildings) at Terminals 2 and 3, including new facilities for passenger and baggage screening, ticketing, and baggage claim; and a secure connector between Terminals 2 and 3.

[12] California Natural Resources Agency, *Notice of Public Hearings and Notice of Proposed Amendment of Regulations Implementing the California Environmental Quality Act*, 2009. Available: https://resources.ca.gov/CNRALegacyFiles/ceqa/docs/Notice_of_Proposed_Action.pdf.

Table 3-1
Projects At/Adjacent to LAX

	Project	Expected Dates	Description
3	LAX Landside Access Modernization Program[1]	2017 – 2035	Approved improvements within and east of the CTA, including an APM system, ITFs, CONRAC, and roadway improvements. Additionally, certain parcels in the local area would become available for redevelopment with new uses as a result of the LAX Landside Access Modernization Program.[1]
4	Terminal 4 Modernization Project	2021 – 2026	Proposed renovation and/or replacement of portions of the existing concourse and ticketing building, realignment of Taxilane C9, and reconstruction of the apron in order to improve passenger level of service, accommodate modern aircraft fleets and operational support equipment, and provide seismic resiliency and structural safety.
5	LAX Airfield Bus Yard Facility	2020 – 2021	A new 15.9-acre bus yard to accommodate LAWA's transition to electric airfield buses, including an airfield bus parking lot, industrial station and underground utilities duct bank, electrical infrastructure and chargers for electric buses and airfield pool vehicles, office building, and employee parking lot.
6	Runway 7R-25L Rehabilitation	2020 – 2021	Planned reconstruction of runway pavement.
7	Midfield Satellite Concourse (MSC) South Project	2021 – 2024	A new 95,000-square-foot concourse is planned south of the MSC North concourse with an elevated circulation corridor between the two concourses, up to eight aircraft gates, and associated utilities and airfield improvements.
8	Airport Metro Connector 96th Street Transit Station	2020 – 2024	A new multi-modal transportation center at 96th Street and Aviation Boulevard to connect LAX to the regional bus and transit system approved for construction by Metro. Components of the Airport Metro Connector (AMC) Station include three at-grade light rail transit (LRT) platforms, bus plaza, bicycle hub, pedestrian plaza, passenger vehicle pick-up and drop-off area and Metro transit center/terminal building ("Metro Hub") to connect passengers between the multiple transportation modes.
9	Terminal 6 Renovation	2020 – 2023	Proposed replacement or repair of aging infrastructure in order to enhance the passenger experience and improve amenities, such as upgrading the Security Screening Check Point and adding holdroom space and lounge areas, adding up to two gates, and reconfiguring existing aircraft gates and ramp area to improve operations.
10	Various Water Pipeline Projects	2020 – 2027	Includes replacement of domestic water pipelines throughout the CTA, replacement of chilled water and heating hot water pipelines feeding Terminal 1, and completion of recycled water pipelines on the LAX campus to receive and distribute reclaimed water to be produced at the Hyperion Water Reclamation Plant. Within the CTA, the recycled water pipelines will include stub-outs near Terminal 1.5 and Terminal 6 that will allow for future connections to the east. Some of these pipeline projects have been approved; environmental documentation for other projects is pending.

Table 3-1
Projects At/Adjacent to LAX

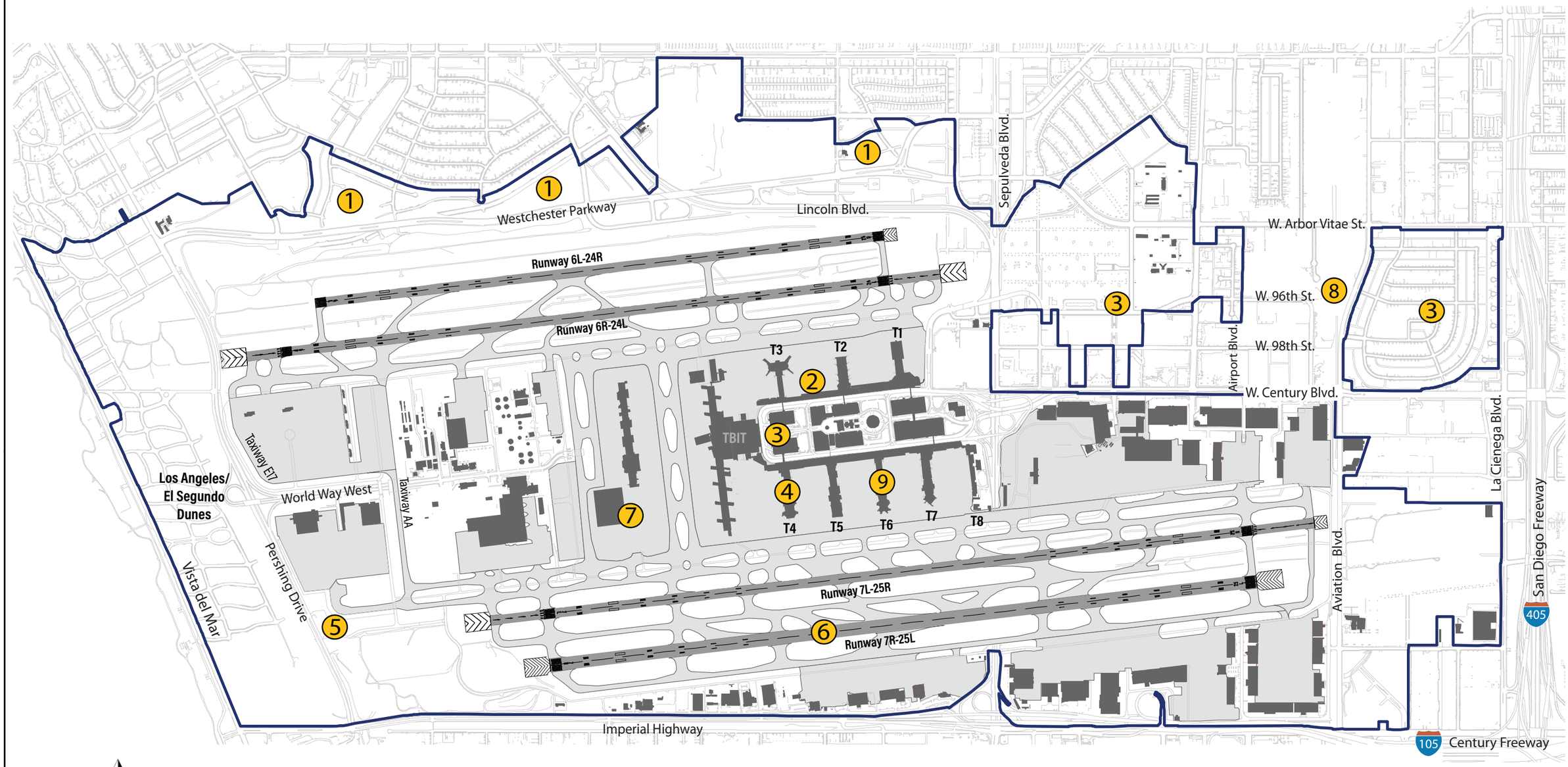
	Project	Expected Dates	Description
NA	Miscellaneous Projects and Improvements[2]	Ongoing	A wide variety of smaller miscellaneous projects and improvements mostly related to repair/replacement of, and upgrades to, existing facilities at LAX, including, but not limited to, runway repair/rehabilitation; elevators/escalators replacement; terminal taxilanes and aprons rehabilitation; passenger boarding bridge replacements; terminal electrical, plumbing, and facilities upgrades; utility infrastructure improvements; miscellaneous demolition; and other improvements.

Source: LAWA, 2020.

Notes:

[1] There are no current proposals or plans regarding what types or amounts of development may occur on the parcels that would be available for other uses as a result of the LAX Landside Access Modernization Program (i.e., the Potential Future Related Development described in the EIR for the Landside Access Modernization Program). Further planning, assessment, and other efforts would be needed prior to any project being proposed on these parcels. Thus, particular uses and development are not reasonably foreseeable at this time. However, any future development would be required to be consistent with the provisions of the LAX Plan and LAX Specific Plan concerning the Airport Landside Support Subarea.

[2] These include discrete projects that are undertaken for general administration, maintenance, or state of good repair, and which do not require environmental review under CEQA. These include projects in various states of approval. None of these projects would be considered to have an individually noticeable effect on any environmental resource. However, these projects are accounted for in the cumulative air quality impacts analysis.



0 2,318 4,365
Feet
Scale

Sources: Ricondo & Associates, Inc., April 2020 (basemap); Los Angeles World Airports, January 2020 (Airport Layout Plan); CDM Smith, April 2020 (Airport Property Line)

Prepared by: CDM Smith, October 2020

Legend

LAX Property Boundary

Project

Notes:

1. Numbers correspond to Table 3-1.
2. Projects not shown on the map occur at multiple locations within the airport (i.e., Various Water Pipeline Projects and Miscellaneous Projects and Improvements).

LAX Airfield and Terminal Modernization Project

Projects At/Adjacent to LAX

Figure
3-1

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4. ENVIRONMENTAL IMPACT ANALYSIS

Introduction

This chapter presents an assessment of the environmental impacts of the LAX Airfield and Terminal Modernization Project described in Chapter 2, *Description of the Proposed Project*. This chapter describes the physical environment at and within the vicinity of LAX that may be affected by the improvements under the proposed Project, the impacts to that physical environment, and the measures proposed to mitigate those impacts when significant, as required.

The following topics are addressed in this chapter:

- Air Quality and Human Health Risk
- Cultural Resources (Historical Resources)
- Energy
- Greenhouse Gas Emissions
- Hazardous Materials
- Land Use and Planning
- Noise
  - Aircraft Noise
  - Roadway Traffic Noise
  - Construction Traffic and Equipment Noise and Vibration
- Transportation
- Utilities
  - Water Supply
  - Wastewater Generation

Organization

Each of the nine main environmental disciplines addressed in this chapter is discussed in a separate section using a common organization. Sections are numbered 4.1 through 4.9. Several sections are divided into subsections to simplify and clarify the discussion.

Within each environmental topic section, discussion of the following is provided:

- The **Introduction** briefly describes the issues addressed in the analysis and identifies related topics. The Introduction also identifies any specific issue area of the topic that is not being addressed as part of the proposed Project EIR and provides a discussion explaining the reasons why. In many cases, a number of specific issue areas were evaluated, and impacts determined to be less than significant, as documented in the LAX Airfield and Terminal Modernization Project Notice of Preparation (NOP)/Initial Study (April 2019), which is included as **Appendix A** of this EIR. In accordance with Sections 15063(c)(3)(A) and 15128 of the State CEQA Guidelines, further analysis of specific issue areas where impacts were determined to be less than significant in the Initial Study is not required and is not provided in this EIR.

- The **Methodology** describes how the issue was approached, including explanations of any assumptions, equations, or calculations; identification of information sources used for the analysis; and delineation of the study area considered for each environmental discipline.
- The **Existing Conditions** section discusses existing conditions for the environmental discipline in the study area, including relevant activities, facilities, and regulations. The environmental baseline is described below under Analytical Framework.
- The **Thresholds of Significance** are quantitative or qualitative measures used to determine whether a significant environmental impact would occur as a result of the proposed Project. This section identifies the source or guidance of the thresholds of significance used in the analysis. In general, and unless otherwise noted, the thresholds of significance used in the analysis of proposed Project impacts reflect guidance provided in Appendix G of the State CEQA Guidelines.[1]
- The **Project Impacts** section presents the analysis of impacts at a project-level for both construction and operation of the proposed Project. Impacts are compared to the thresholds of significance to determine whether they would be significant or less than significant under CEQA. For purposes of determining significance, impacts are compared to the environmental baseline conditions, as further described in the *Analytical Framework* below. Within this section are impact determinations and suggested **mitigation measures** that would feasibly mitigate each significant impact. Mitigation measures are specified actions proposed for adoption by the lead agency (LAWA) to reduce or avoid the significant impacts identified in the analysis of environmental impacts. If the recommended measures should be carried out by another agency, then the other agency is identified. If impacts are considered significant prior to mitigation, mitigation measures have been suggested that would reduce significant impacts. Following identified mitigation measures, there is a statement whether the mitigation would reduce the impact to a less than significant level, or whether the impact would remain significant and unavoidable.
- The **Cumulative Impacts** section discusses the impacts of the proposed Project in conjunction with past, present, and reasonably foreseeable probable future projects. The environmental impacts of the proposed Project may be individually minor, but collectively significant when considered in conjunction with other projects.
- The **Summary of Impact Determinations** provides a table which summarizes the conclusion of the Project Impacts section, including the impact determinations of the proposed Project before mitigation, mitigation measures proposed to reduce or avoid significant impacts, and the level of significance after implementation of the proposed mitigation measures.

Analytical Framework

Environmental Baseline

Section 15125(a) of the State CEQA Guidelines requires that an EIR describe the physical environmental conditions in the vicinity of a proposed project and states that "[t]his environmental setting will normally constitute the baseline physical conditions by which a lead agency determines whether an impact is significant…. The purpose of this requirement is to give the public and decision makers the most accurate and understandable picture practically possible of the project's likely near-term and long-term impacts."

[1] State of California, *Guidelines for California Environmental Quality Act (State CEQA Guidelines)*, California Code of Regulations, Title 14, Chapter 3, Sections 15000-15387.

Existing Conditions (2018/2019) Baseline

Section 15125(a)(1) of the State CEQA Guidelines identifies different ways in which a lead agency may define "existing conditions" for purposes of identifying the appropriate baseline against which to measure a proposed project's impacts and states that "[g]enerally, the lead agency should describe physical environmental conditions as they exist at the time the notice of preparation is published, or if no notice of preparation is published, at the time environmental analysis is commenced, from both a local and regional perspective."

The NOP for this EIR was published on April 4, 2019. In accordance with the provisions of CEQA, LAWA has selected 2019 as the baseline year for characterizing existing physical conditions in the environmental analysis. Where existing physical conditions data specific to 2019 were not available or where 2019, by itself, was not an appropriate representation of baseline physical conditions, this EIR identifies this fact, explains the data that were used to determine existing physical conditions, and provides evidence of why this information is representative of baseline physical conditions.

For the analysis of certain operational impacts, a full year's worth of operational data for LAX was considered necessary and appropriate to characterize existing baseline conditions, since the operational characteristics of LAX, especially in terms of aircraft operations, vary throughout the year based on seasonal travel and holiday travel. Those changes in operations result in temporal differences in existing aircraft noise and existing aircraft-related air pollutant emissions, such that an appropriate existing conditions baseline for evaluating operational impacts takes into account an entire year's worth of operational data. As such, LAX operational data for all of 2018, the calendar year prior to the release of the NOP, were used to define existing baseline conditions for the evaluation of potential impacts related to aircraft noise and aircraft-related air pollutant and greenhouse gas (GHG) emissions.

Projected Future Conditions Baselines

Section 15125(a)(2) of the State CEQA Guidelines also provides that a lead agency "may use projected future conditions (beyond the date of project operations) baseline as the sole baseline for analysis … if it demonstrates with substantial evidence that use of existing conditions would be either misleading or without informative value to decision-makers and the public. Use of projected future conditions as the only baseline must be supported by reliable projections based on substantial evidence in the record."

In certain instances, LAWA has determined that use of the existing conditions (2018/2019) baseline would be either misleading or without informative value to decision-makers and the public. In these instances, LAWA has used projected future conditions as the baseline for analysis.

In evaluating potential aircraft noise, air quality, and GHG impacts associated with the temporary closure of runways necessary to construct proposed improvements in the north airfield of LAX (described in Section 2.6.4), the analysis uses aircraft operations projected to occur in 2023 and 2024 - the years when each runway closure is anticipated to occur – as the sole baseline. This is because during the 4.5 months in each of the two years with a runway closure, aircraft operations at LAX would be redistributed among the remaining three runways. By assuming 2023 and 2024 for baseline conditions, instead of 2018, the impacts analysis accounts for the five to six interim years of growth in aircraft operations projected to occur at LAX, which would otherwise not be accounted for if 2018 was assumed as the baseline year. In these instances, using 2018 as the baseline would be misleading and without informative value since it would not accurately capture the temporary impacts that would occur due to runway closure. This approach is appropriate because LAX is a dynamic facility, and conditions are generally not static over time. In particular, the level of aircraft operations that exist in 2023 and 2024 will differ from those conditions that existed in 2019. It is, therefore, appropriate to adjust the baseline to reflect these anticipated conditions as of 2023 and 2024. This approach is conservative because the

number of aircraft operations is expected to increase between 2019 and 2023/2024. As a result, the use of a 2023/2024 baseline involves more aircraft operations, and therefore greater impacts, than would occur if a 2019 baseline were used for this purpose.

The Draft EIR also uses a projected future conditions baseline in the analysis of transportation impacts. Specifically, as discussed in Section 2.3.2 in Chapter 2, *Description of the Proposed Project*, one of the objectives of the proposed Project is to complete construction of the proposed Project prior to the 2028 Olympic and Paralympic Games scheduled to be held in Los Angeles. By year 2028, substantial evidence in the record demonstrates that Phase 1 of the LAX Landside Access Modernization Program, including the Automated People Mover (APM), Intermodal Transportation Facility (ITF) East, ITF West, Consolidated Rental Car Facility (CONRAC), Phase 1 roadways, and a connection to the Airport Metro Connector 96th Street Transit Station, will be completed. Phase 1 of the LAX Landside Access Modernization Program is approved, funded, under construction, and scheduled for completion well before 2028. For this reason, it would be misleading and without informative value to analyze the Project's impacts at buildout in 2028 without accounting for the APM, ITF East, ITF West, CONRAC, and other LAX Landside Access Modernization Program Phase 1 improvements. These improvements will substantially change the surface transportation characteristics around the airport, including as related to vehicle miles traveled (VMT). Therefore, projected future conditions in year 2028 are used as the sole baseline for the transportation impact analysis since use of existing conditions (2018/2019) as the baseline would be misleading and without informative value to decision-makers and the public. Please see Section 4.8, *Transportation*, for additional discussion of the use of a projected future conditions baseline as the basis for the evaluation of VMT.

Evaluation of Cumulative Impacts

As defined in Section 15355 of the State CEQA Guidelines, cumulative impacts are the incremental impacts of a proposed project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts may be individually minor, but collectively significant.

In accordance with Section 15130 of the State CEQA Guidelines, this EIR discusses cumulative impacts of the proposed Project when the Project's incremental effect is cumulatively considerable. As defined by Section 15065 of the State CEQA Guidelines, "cumulatively considerable means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, other current projects, and probable future projects."

In order to evaluate the potential for significant cumulative impacts, the EIR determines the geographic area of potential cumulative impacts analysis for each environmental resource area, and identifies the relevant projects at/adjacent to LAX (listed in Table 3-1 in Section 3.4, *Development Setting*) that could, in conjunction with the proposed Project, result in cumulative impacts. Next, the impacts of the proposed Project are summarized, as are the impacts of each individual relevant cumulative project. The combined impacts of the proposed Project and the other relevant projects are then evaluated to determine if cumulative impacts of all the projects would be significant, based on the applicable threshold(s) of significance. If a significant cumulative impact is identified, a determination is made as to whether the contribution of the proposed Project to the cumulative impact would be cumulatively considerable. Where it is determined that the proposed Project would have a cumulatively considerable contribution to a significant cumulative impact, the analysis includes an evaluation of whether a mitigation measure(s) would render that contribution to a level that is less than cumulatively considerable.

NEPA Analysis

Implementation of the proposed Project requires certain approvals from the Federal Aviation Administration (FAA), and such federal approvals are subject to environmental review under the National Environmental Policy Act (NEPA). In accordance with NEPA requirements, an Environmental Assessment (EA) is prepared, which evaluates the effects of a proposed Federal action (i.e., a proposed project) on the surrounding environment and assists in determining whether potential environmental impacts are significant. For the proposed Project, the FAA is the lead agency responsible for completing the NEPA review process, including the processing of an EA for the proposed Project. The EA currently being prepared and processed for the proposed Project is separate from this Draft EIR. It is important to note that there are key differences between CEQA and NEPA relative to the analytical framework for evaluating environmental impacts, including, but not limited to, the environmental baseline and the thresholds of significance.

As described earlier in this section, the State CEQA Guidelines indicate that the physical environmental conditions in the vicinity of a proposed project, as they exist at the time the NOP is published, will normally constitute the baseline physical conditions by which a lead agency determines whether an impact is significant. That constitutes the Existing Conditions Baseline, as described above. With the exception of the impacts related to transportation and temporary runway closures during construction, which are evaluated in terms of Projected Future Conditions Baselines, the evaluation of impacts throughout this chapter of the EIR is based on future environmental conditions at buildout of the proposed Project in 2028 as measured against the Existing Conditions Baseline. As such, many of the operations-related impacts, such as those related to air quality, GHG, and aircraft noise, that are ascribed to the proposed Project are based on the difference between existing airport activity levels and future (2028) airport activity levels, even though the projected increase in airport activity levels would occur even without the proposed Project.

Under NEPA requirements, by contrast, the baseline by which impacts of a proposed project are measured is the No Action Alternative, which, in essence, represents the future environmental conditions that would exist if the proposed Project were not implemented. With respect to evaluation of aircraft-related impacts in this EIR, the number of annual aircraft operations (i.e., takeoffs and landings) projected for 2028 is 800,000, as compared to 715,000 annual operations in 2018; hence, impacts related to aircraft noise and aircraft air pollutant emissions, including GHG emissions, are based on an increase of 85,000 annual operations. Based on NEPA requirements, it is anticipated that the evaluation of the aircraft-related impacts in the EA to be prepared for the proposed Project will be based on the same number of annual aircraft operations for the proposed Project in 2028 as for the No Action Alternative in 2028. In light of how the increment of change in environmental conditions addressed in the CEQA analysis of the proposed Project will be different from that in the NEPA analysis of the proposed Project, it is anticipated that the conclusions regarding significant impacts in that regard may be different between the EIR and the EA.

Regarding the thresholds of significance applied in evaluating the environmental impacts of the proposed Project, it is anticipated that there will be differences between the thresholds of significance in the EIR and the thresholds of significance in the EA. For example, the thresholds of significance used in the EIR for evaluating air quality impacts are based on thresholds set forth by the South Coast Air Quality Management District, a regional agency specific to Southern California, whereas the thresholds of significance to be used in the EA are anticipated to be based on nationwide standards as set forth through the federal Clean Air Act. Based on such differences in thresholds, it is anticipated that there may be differences between the EIR and the EA regarding the significance of air quality impacts.

There may be other reasons why the EIR and the EA may reach different conclusions concerning whether the proposed Project will cause significant environmental effects. For example, in preparing the EA, the FAA may rely on different data or use different methodologies to evaluate the proposed Project. The two differences described above are noted because they represent ways in which CEQA and NEPA require different approaches to evaluating a proposed project's environmental impacts.

In summary, the conclusions presented in this chapter of the EIR regarding significant impacts may be different from those of the EA for the proposed Project.

4.1 Air Quality and Human Health Risk

4.1.1 Air Quality

4.1.1.1 Introduction

This air quality analysis examines criteria pollutant emissions that would result from construction and operations associated with the proposed Project. Operational activities, including aircraft and ground support operations, on-airport traffic and stationary sources, and off-airport regional traffic, are evaluated at buildout of the proposed Project in 2028. The analysis also addresses emissions from construction activities (e.g., on-site and off-site construction equipment, fugitive dust, and worker vehicle trips) that would occur during the construction period, which is anticipated to occur between 2021 and early 2028; and evaluates emissions associated with the temporary closure of a runway during construction.

As further discussed under the heading "Analytical Framework" at the beginning of this chapter (Environmental Impact Analysis), the Notice of Preparation for this EIR was published on April 4, 2019. In accordance with the provisions of CEQA, 2019 is the baseline year for characterizing existing conditions in the environmental analysis. However, for certain analyses, a full year's worth of data was considered necessary and appropriate to characterize existing baseline conditions. As the technical analyses for this EIR commenced in 2019, data for 2018 were used for these analyses to define existing baseline conditions. Therefore, Project-related air pollutant emissions were compared to the air pollutant emissions associated with baseline conditions in 2018. For construction-related activities, no baseline year was used (i.e., "baseline" would be zero), because construction would not otherwise occur without the proposed Project and, therefore, increments were not calculated.

Impacts related to human health risks from inhalation of toxic air contaminant (TAC) emissions are addressed in Section 4.1.2, *Human Health Risk*. Greenhouse gas emissions are discussed separately in Section 4.4, *Greenhouse Gas Emissions*. **Appendix C** provides details on methods, assumptions, and backup data for both air quality and the human health risk assessment (HHRA).

Prior to the preparation of this EIR, an Initial Study (included in **Appendix A** of this EIR) was prepared using the CEQA Environmental Checklist Form to assess potential environmental impacts on air quality. For one of these screening criteria, the Initial Study found that the proposed Project would result in "No Impact and, thus, no further analysis of this topic in an EIR was required. Based on the Initial Study screening criteria related to air quality, the following potential impact does not require any additional analysis in this EIR:

- The potential for "other" (non-criteria pollutant) emissions (such as those leading to odors) to adversely affect a substantial number of people was evaluated in the Initial Study. The use of diesel equipment during construction would generate near-field odors. Diesel equipment emits a distinctive odor that may be considered offensive to certain individuals. The closest sensitive receptors are hotels to the north and east of the Project boundary, on the north side of Century Boulevard between Sepulveda Boulevard and Avion Drive. Because of variabilities in wind speed and direction as related to the dispersion of construction emissions and distances to nearby receptors, odors from construction-related diesel exhaust would not affect a substantial number of people. The Project site is located at LAX, which is characterized by aircraft operations, passenger processing, and vehicular movement. The proposed Project would result in airport operations consistent with existing activities at LAX and would not notably change existing odors at or in the vicinity of the Project site. Therefore, operation of the proposed Project would not result in other emissions (such as those leading to odors) adversely affecting a substantial number

of people. Impacts associated with other emissions, including odors, would be less than significant and no further analysis in this EIR is required.

The air quality impact analysis presented below includes development of emission inventories for the proposed Project (i.e., the quantities of specific pollutants, typically expressed in pounds per day [lbs/day] or tons per year [tpy]) based on emissions modeling. The analysis also includes an assessment of localized concentrations of air pollutants associated with the proposed Project (i.e., the concentrations of specific pollutants within ambient air, typically expressed in terms of micrograms per cubic meter [$\mu g/m^3$]) based on dispersion modeling. The criteria pollutant emissions inventories and localized concentrations were developed using standard industry software/models and federal-, state-, and locally-approved methodologies. Results of the emissions inventories were compared to daily emissions thresholds established by the South Coast Air Quality Management District (SCAQMD) for the South Coast Air Basin.[1] Results of the ambient concentrations modeling were compared to SCAQMD concentration thresholds.

4.1.1.1.1 Pollutants of Interest

Six criteria pollutants were evaluated for the proposed Project's construction and operational activities: ozone (O_3), using as surrogates volatile organic compounds (VOC)[2] and oxides of nitrogen (NO_X);[3] nitrogen dioxide (NO_2); carbon monoxide (CO); sulfur dioxide (SO_2); respirable particulate matter or particulate matter with an aerodynamic diameter less than or equal to 10 micrometers (PM_{10}); and fine particulate matter, or particulate matter with an aerodynamic diameter less than or equal to 2.5 micrometers ($PM_{2.5}$).

Although lead (Pb) is a criteria pollutant, it was not evaluated in this section because the proposed Project would have negligible impacts on Pb levels in the South Coast Air Basin. The Initial Study conducted for the proposed Project (included in **Appendix A**) noted that potential releases of hazardous building materials, including lead-containing surfaces, during building demolition would be minimized through adherence to existing regulations that govern demolition and removal of existing structures, and the impacts would be less than significant.[4] The only direct source of Pb emissions from airport activity is from aviation gasoline (AvGas) associated with piston-engine general aviation aircraft; however, very few, if any, piston engine aircraft fly into LAX, and AvGas is no longer stored at the fuel farm operated by LAXFUEL. However, the trace amounts of Pb identified in jet fuel are assessed in Section 4.1.2, *Human Health Risk*.

Sulfate compounds (e.g., ammonium sulfate) are generally not emitted directly into the air but are formed through various chemical reactions in the atmosphere; thus, sulfate is considered a secondary pollutant. All sulfur emitted by airport-related sources included in this analysis was assumed to be released and to remain in the atmosphere as SO_2. No sulfate inventories or concentrations were estimated for the criteria air pollutant analysis because the relative abundance of sulfates from fuel combustion is much lower than that of SO_2, and because very little sulfur is emitted from Project sources.[5] However, the trace amounts of sulfates identified in jet fuel are assessed in Section 4.1.2, *Human Health Risk*.

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1 South Coast Air Quality Management District, *South Coast AQMD Air Quality Significance Thresholds*, April 2019. Available: http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf?sfvrsn=2.

2 The emissions of volatile organic compounds (VOC) and reactive organic gases (ROG) are essentially the same for the combustion emission sources that are considered in this EIR. This EIR will typically refer to organic emissions as VOC.

3 NO_X is a generic term for a mixture of two specific oxides of nitrogen, nitric oxide (NO) and nitrogen dioxide (NO_2).

4 Section IX.b of the Initial Study (included in **Appendix A** of this EIR) discusses procedures to minimize generation of lead emissions from lead-containing surfaces (e.g., lead-based paint) during demolition activities associated with the proposed Project. As discussed therein, should lead-based paint materials be identified, standard handling and disposal practices would be implemented pursuant to federal Occupational Safety and Health Administration (OSHA) and California OSHA regulations to limit worker and environmental risks. Compliance with existing federal, state, and local regulations and routine precautions would reduce the potential for hazards to the public or the environment through the routine disposal or accidental release of hazardous building materials. Therefore, lead emissions from lead-based paint during demolition activities associated with the proposed Project would be less than significant.

5 Seinfeld, J.H. and S.N. Pandis, *Atmospheric Chemistry and Physics – From Air Pollution to Climate Change*, 1998, p. 59.

Hydrogen sulfide is not produced or used at LAX. It is typically produced by microbial processes or released from geothermal steam, wood pulping, or oil production.[6] Vinyl chloride also is not produced at LAX. It is raw organic compound used in the production of pipe, hose, wrapping, and other products fabricated from polyvinylchloride plastic.[7] Therefore, hydrogen sulfide and vinyl chloride are not evaluated in this EIR.

Following standard professional practice for project EIRs, the evaluation of O_3 was conducted by evaluating emissions of VOCs and NO_X, which are precursors in the formation of O_3. O_3 is a regional pollutant and ambient concentrations can only be predicted using regional photochemical models that account for all sources of precursors; regional photochemical O_3 modeling, under standard professional practice, is not used for project-level reviews because due to the nature of regional O_3 models, results would be speculative and not be meaningful or accurate.[8,9,10] Therefore, photochemical O_3 modeling was not conducted. However, the health effects of the Project's contributions to regional O_3 were nevertheless analyzed. See Section 4.1.1.2.6 for a detailed discussion of the methodology used to analyze the human health effects of the Project's contributions to regional O_3.

Additional information regarding the six criteria pollutants that were evaluated in the air quality analysis, and their health impacts, is presented below.

4.1.1.1.1.1 Ozone (O_3)[11]

O_3, the main component of smog, is formed from precursor pollutants rather than being directly emitted from pollutant sources. O_3 forms as a result of VOCs and NO_X reacting in the presence of sunlight. O_3 levels are typically highest in warm-weather months and in urban areas. VOCs and NO_X are termed "O_3 precursors" and their emissions are regulated in order to control the creation of O_3. O_3 damages lung tissue and reduces lung function. Scientific evidence indicates that ambient levels of O_3 not only affect people with impaired respiratory systems (e.g., asthmatics), but also healthy children and adults. O_3 can cause health effects, such as chest discomfort, coughing, nausea, respiratory tract and eye irritation, and decreased pulmonary functions.

4.1.1.1.1.2 Nitrogen Dioxide (NO_2)[12]

NO_2 is a reddish-brown to dark brown gas with an irritating odor. NO_2 forms when nitric oxide reacts with atmospheric oxygen. The primary source of NO_2 is the combustion of fuel. Significant sources of NO_2 at airports are boilers, aircraft operations, and vehicle movements. NO_2 emissions from these sources are highest during high-temperature combustion, such as aircraft takeoff mode. NO_2 may produce adverse

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6 Manahan, S.E., *Environmental Chemistry - Seventh Edition*, 2000. p. 348.

7 Manahan, S.E., *Environmental Chemistry - Seventh Edition*, 2000. p. 862.

8 South Coast Air Quality Management District, *Application of the South Coast Air Quality Management District for Leave to File Brief of Amicus Curiae in Support of Neither Party and [Proposed] Brief of Amicus Curiae, Case No. S219783 in the Supreme Court of California*, April 13, 2015. Available: https://www.courts.ca.gov/documents/9-s219783-ac-south-coast-air-quality-mgt-dist-041315.pdf, accessed June 22, 2020.

9 San Joaquin Valley Unified Air Pollution Control District, *Application for Leave to File Curiae Brief of San Joaquin Valley Unified Air Pollution Control District in Support of Defendant and Respondent, County of Fresno and Real Party in Interest and Respondent, Friant Ranch, L.P, Case No. S219783 in the Supreme Court of California*, April 13, 2015. Available: https://www.courts.ca.gov/documents/7-s219783-ac-san-joaquin-valley-unified-air-pollution-control-dist-041315.pdf, accessed June 22, 2020.

10 California Association of Environmental Professionals and American Planning Association California Chapter, *Application for Leave to File Amicus Curiae Brief in Support of Friant Ranch, L.P. on Behalf of California Association of Environmental Professionals and American Planning Association California Chapter; Proposed Amicus Curiae Brief, Case No. S219783 in the Supreme Court of California*, May 12, 2015. Available: https://www.courts.ca.gov/documents/14-s219783-ac-ca-assn-environ-prof-et-al-051215.pdf, accessed June 22, 2020.

11 U.S. Environmental Protection Agency, *Ozone Pollution – Ozone Basics*. Available: https://www.epa.gov/ozone-pollution/ozone-basics, accessed October 14, 2019.

12 U.S. Environmental Protection Agency, *Nitrogen Dioxide (NO_2) Pollution – Basic Information about NO_2*. Available: https://www.epa.gov/no2-pollution/basic-information-about-no2, accessed October 14, 2019.

health effects, such as nose and throat irritation, coughing, choking, headaches, nausea, stomach or chest pains, and lung inflammation (e.g., bronchitis, pneumonia).

4.1.1.1.1.3 Carbon Monoxide (CO)[13]

CO is an odorless, colorless gas that is toxic. It is formed by the incomplete combustion of fuels. The primary sources of this pollutant in Los Angeles County are automobiles and other sources that burn fossil fuels. Breathing air with high concentrations of CO reduces the amount of oxygen in the blood, causing heart difficulties in people with chronic diseases, reduced lung capacity, and impaired mental abilities.

4.1.1.1.1.4 Particulate Matter (PM_{10}) and Fine Particulate Matter ($PM_{2.5}$)[14]

Particulate matter consists of solid and liquid particles of dust, soot, aerosols, and other matter small enough to remain suspended in the air for a long period of time. Particles smaller than 10 micrometers (i.e., PM_{10} and $PM_{2.5}$) represent that portion of particulate matter thought to signify the greatest hazard to public health.[15] PM_{10} and $PM_{2.5}$ can accumulate in the respiratory system and are associated with a variety of negative health effects. Exposure to particulate matter can aggravate existing respiratory conditions, increase respiratory symptoms and disease, decrease long-term lung function, and possibly cause premature death. The segments of the population that are most sensitive to the negative effects of particulate matter in the air are the elderly, individuals with cardiopulmonary disease, and children.

A portion of the particulate matter in the air comes from natural sources, such as windblown dust and pollen. Man-made sources of particulate matter include fuel combustion, automobile exhaust, field burning, cooking, tobacco smoking, factories, and vehicle movement or other man-made disturbances on unpaved areas. Fugitive dust generated by construction activities is a major source of suspended particulate matter. Secondary formation of particulate matter may occur in some cases where gases, such as sulfur oxides (SO_X) and NO_X, interact with other compounds in the air to form particulate matter.[16] In the South Coast Air Basin, both VOCs and ammonia are also considered precursors to $PM_{2.5}$.

The secondary sources of particulate matter, SO_X and NO_X, are also major precursors to acidic deposition (acid rain). Human health concerns from acid rain include effects on breathing and the respiratory system, damage to lung tissue, and premature death. Small particles can penetrate sensitive parts of the lungs and can cause or worsen respiratory disease. NO_X has the potential to change the composition of some species of vegetation in wetland and terrestrial systems, create the acidification of freshwater bodies, impair aquatic visibility, create eutrophication of estuarine and coastal waters, and increase the levels of toxins harmful to aquatic life.

4.1.1.1.1.5 Sulfur Dioxide (SO_2)[17]

Sulfur oxides are formed when fuel containing sulfur (typically, coal and oil) is burned, and during other industrial processes. The term "sulfur oxides" accounts for distinct but related compounds, primarily SO_2 and sulfur trioxide (SO_3). As a conservative assumption for this analysis, it was assumed that all SO_X are

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13 U.S. Environmental Protection Agency, *Carbon Monoxide (CO) Pollution in Outdoor Air – Basic Information about Carbon Monoxide (CO) Outdoor Air Pollution.* Available: https://www.epa.gov/co-pollution/basic-information-about-carbon-monoxide-co-outdoor-air-pollution, accessed October 14, 2019.

14 U.S. Environmental Protection Agency, *Particulate Matter (PM) Pollution – Particulate Matter (PM) Basics.* Available: https://www.epa.gov/pm-pollution/particulate-matter-pm-basics, accessed October 14, 2019.

15 U.S. Environmental Protection Agency, *Particle Pollution and Your Health*, September 2003. Available: https://www3.epa.gov/airnow/particle/pm-color.pdf.

16 The term SO_X accounts for distinct but related compounds, primarily SO_2 and, to a far lesser degree, sulfur trioxide. As a conservative assumption for this analysis, it was assumed that all SO_X is emitted as SO_2; therefore, SO_X and SO_2 are considered equivalent in this document and only the latter term is used henceforth.

17 U.S. Environmental Protection Agency, *Sulfur Dioxide (SO_2) Pollution – Sulfur Dioxide Basics.* Available: https://www.epa.gov/so2-pollution/sulfur-dioxide-basics, accessed October 14, 2019.

emitted as SO_2; therefore, SO_X and SO_2 are considered equivalent in this document. Higher SO_2 concentrations are usually found in the vicinity of large industrial facilities.

The physical effects of SO_2 include temporary breathing impairment, respiratory illness, and aggravation of existing cardiovascular disease. Children and the elderly are most susceptible to the negative effects of exposure to SO_2.

4.1.1.1.2 Scope of Analysis

The air quality analysis conducted for the proposed Project addresses construction-related impacts for the peak day of proposed construction activities and operations-related impacts following completion of construction. The basic steps involved in the scope of analysis are listed below.

4.1.1.1.2.1 Construction

Construction emissions were quantified for each year of construction, which is anticipated to occur over seven years between 2021 and 2028. The associated concentrations were estimated for the peak construction emissions year for each pollutant.

The scope of the construction emissions evaluation included the following components:

- Identify construction-related emissions sources
- Develop peak daily and annual construction emissions inventories for the identified sources
- Compare Project-related regional construction emissions inventories for each year of construction with appropriate CEQA significance thresholds for construction
- Compare peak construction concentrations with appropriate SCAQMD concentration thresholds for construction
- Determine level of significance of Project impacts
- Identify construction-related mitigation measures, if required

4.1.1.1.2.2 Operations

Operational emissions were quantified for existing conditions (2018) and the first year of operation after buildout of the proposed Project (expected in 2028). The scope of the operational emissions evaluation included the following components:

- Identify operational-related emissions sources
- Develop peak daily and annual operational emissions inventories for the identified sources
- Compare Project-related emissions inventories with appropriate CEQA significance thresholds for operations
- Conduct dispersion modeling of Project-related operational emissions
- Determine level of significance of Project impacts
- Identify operations-related mitigation measures, if required

4.1.1.2 Methodology

The methodology for the air quality analysis was documented in an air quality impact analysis protocol that was presented to SCAQMD and the California Air Resources Board (CARB) prior to the initiation of the air quality modeling. The final protocol reflects comments received by SCAQMD and CARB. SCAQMD

acknowledged receipt of the final protocol with the updates that addressed their comments.[18,19] CARB coordinated with SCAQMD[20] and, therefore, did not provide a separate acknowledgement of the CEQA protocol.

4.1.1.2.1 Emission Source Types – Construction

Construction-related criteria pollutant emissions were quantified for CO, VOC, NO_X, SO_2, PM_{10}, and $PM_{2.5}$ for the proposed Project's constituent construction activities (Project components). Sources of construction emissions evaluated in the analysis include off-road and on-road construction equipment, on-road hauling, on-road delivery vehicles, and worker vehicles; fugitive dust (PM_{10} and $PM_{2.5}$) from demolition, material handling, and vehicle travel on silted roadways; and fugitive VOCs from coating, painting, and paving. Construction of several of the taxiway improvements would require each of the north airfield runways to be closed (not simultaneously) for several months in 2023 and 2024. The incremental emissions from longer aircraft taxi/idle times during the closures were included in the construction emissions inventories, as discussed in Section 4.1.1.5.1.1.

The basis for the construction emissions analysis is the construction schedule, which identifies activities and approximate durations for each Project component that together constitute the proposed Project.[21] Construction activity estimates were developed for each Project component, from which monthly emissions were quantified. Daily emissions were calculated by dividing monthly emissions by the number of workdays in the given month, based on a 5-day-per-week workweek. Construction activity was estimated at a monthly level of refinement; thus, the peak day of construction was identified as a day occurring during the month with the highest daily emissions. Annual and quarterly emissions, as applicable, were based on the monthly emissions estimates.

Emissions estimates for the proposed Project's construction activities included the application of emission reduction measures required by SCAQMD, including compliance with Rule 403[22] for fugitive dust control and use of ultra-low sulfur fuel.

As further described in Chapter 2, *Description of the Proposed Project*, construction of the proposed Project would occur over approximately seven years, projected to begin in 2021 and to end in 2028.

4.1.1.2.1.1 Off-Road Equipment

For purposes of this EIR, off-road construction equipment includes bulldozers, loaders, compactors, and other heavy-duty construction equipment that is not licensed to travel on public roadways. Off-road construction equipment types, models, horsepower, load factor, engine U.S. Environmental Protection Agency (USEPA) tier levels, and estimated maximum daily hours of operation anticipated to be used during construction of the proposed Project were developed for the proposed Project.[23] Equipment types with corresponding operating hours were matched with specific construction activities for each Project component. The proposed Project schedule assumes a single shift, 8-hour workday and a 5-day workweek during the peak month of construction. The assumptions regarding the amount of equipment and number

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18 CDM Smith, *Los Angeles International Airport – Airfield and Terminal Modernization Project, Final CEQA Protocol for Conducting an Air Quality Impact Analysis of Criteria Air Pollutants*, June 4, 2020. This protocol is included as **Appendix C.8** of this EIR.

19 Sun, Lijin, South Coast Air Quality Management District, Electronic Mail Message to Evelyn Quintanilla, Los Angeles World Airports, *Subject: Re: Emailing Memorandum – Response to SCAQMD Comments on CEQA AQ Protocol Final.pdf*, June 30, 2020.

20 Benjamin, Michael, California Air Resources Board, Electronic Mail Message to David Kessler, Federal Aviation Administration, *Subject: Re: Los Angeles International Airport – Proposed Airfield and Terminal Modernization Project – Draft Air Quality Modeling Protocol*, November 14, 2019.

21 City of Los Angeles, Los Angeles World Airports, *LAX Airfield and Terminal Modernization Program (ATMP) Air Quality Modeling Data & Assumptions*, prepared by Connico Incorporated, September 2019 (with updates October 2019).

22 South Coast Air Quality Management District, *Rule 403 - Fugitive Dust*, amended June 3, 2005. Available: http://www.aqmd.gov/docs/default-source/rule-book/rule-iv/rule-403.pdf?sfvrsn=4.

23 City of Los Angeles, Los Angeles World Airports, *LAX Airfield and Terminal Modernization Program (ATMP) Air Quality Modeling Data & Assumptions*, prepared by Connico Incorporated, September 2019 (with updates October 2019).

of construction workers reflect completion of Project construction within the planned construction duration.

Off-road diesel exhaust emission factors for CO, VOC, NO_X, SO_2, PM_{10}, and $PM_{2.5}$ were based on CARB's OFFROAD2017 emissions model.[24] Emissions for off-road equipment were calculated by multiplying an emission factor by the horsepower, load factor, usage factor, and operational hours for each type of equipment. These calculations include appropriate reductions achieved with implementation of mandated dust control, as required by SCAQMD Rule 403 (Fugitive Dust).

4.1.1.2.1.2 On-Road On-Site Equipment

For the proposed Project, on-road on-site equipment emissions would be generated from on-site pickup trucks, water trucks, haul trucks, dump trucks, cement trucks, and other on-road vehicles that are licensed to travel on public roadways. Exhaust emissions for each construction year from on-road on-site vehicles were calculated using CARB's EMFAC2017[25,26] emission factor model. Off-model adjustment factors were applied to the emission factors generated by EMFAC2017 to account for the federal government's "Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule Part One: One National Program."[27] The off-model adjustment factors are specifically applied to NO_X, total organic gases (TOG),[28] PM, and CO exhaust from gasoline fueled light-duty vehicles.[29]

On-road on-site equipment types were categorized into vehicle types corresponding to CARB vehicle classes. Emission factors from the EMFAC2017 model are expressed in grams per mile (g/mi) and account for startup, running, and idling operations. In addition, the VOC emission factors include diurnal, hot soak, running, and resting emissions, while the PM_{10} and $PM_{2.5}$ factors include tire and brake wear. The emission factors were converted to pounds per hour (lbs/hr) and applied to the hourly activity schedule.

4.1.1.2.1.3 On-Road Off-Site Equipment

On-road off-site vehicle trips include personal vehicles used by construction workers to access the construction site, as well as haul and delivery truck trips for the transport of various materials to and from the site. On-road off-site hauling activity, including miles per trip and number of trips, were developed for each Project component. On-road off-site vehicle emissions were calculated by determining total vehicle miles traveled (VMT) by each type of vehicle (see Section 4.8, *Transportation*, for a detailed description of how VMT was calculated). The emission factors obtained from EMFAC2017 as described previously (in g/mi) were applied to the VMT estimates to calculate total emissions.

4.1.1.2.1.4 Fugitive Dust

Fugitive construction dust is an additional source of PM_{10} and $PM_{2.5}$ emissions associated with construction activities. Fugitive dust includes re-suspended road dust from off- and on-road vehicles, as well as dust from grading, loading and unloading activities, and construction demolition. Fugitive dust emissions were calculated using methodologies, formulas, and values from the USEPA's Compilation of Air Pollutant Factors (AP-42), the SCAQMD's *CEQA Air Quality Handbook*, supplemental guidance documentation for the SCAQMD's *CEQA Air Quality Handbook,* and documentation associated with the

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[24] California Air Resources Board, *OFFROAD2017 – ORION v1.0.1*. Available: https://www.arb.ca.gov/orion/, accessed October 16, 2019.

[25] California Air Resources Board, *EMFAC2017 Web Database (v1.0.2*). Available: https://www.arb.ca.gov/emfac/2017/, accessed October 16, 2019.

[26] California Air Resources Board, *EMFAC2017 Volume I - User's Guide V1.0.2*, March 1, 2018. Available: https://ww3.arb.ca.gov/msei/downloads/emfac2017-volume-i-users-guide.pdf.

[27] U.S. Department of Transportation, National Highway Traffic Safety Administration, *The Safer Affordable Fuel-Efficient 'SAFE' Vehicles Rule webpage*. Available: https://www.nhtsa.gov/corporate-average-fuel-economy/safe, accessed April 6, 2020.

[28] TOG contains all compounds listed as exempt in the ROG definition.

[29] California Air Resources Board, *EMFAC Off-Model Adjustment Factors to Account for the SAFE Vehicle Rule Part One*, November 20, 2019. Available: https://ww3.arb.ca.gov/msei/emfac_off_model_adjustment_factors_final_draft.pdf.

California Air Pollution Control Officers Association's (CAPCOA) CalEEMod emissions estimator computer program.[30,31,32]

The proposed Project is considered to be a large operation per SCAQMD Rule 403.[33] Watering three times a day, as required by SCAQMD Rule 403 for large projects, was assumed during construction, with an estimated reduction in on-site fugitive dust emissions of 61 percent.[34]

4.1.1.2.1.5 Fugitive VOCs

A primary source of construction-related fugitive VOC emissions is asphalt paving. VOC emissions from asphalt paving operations result from evaporation of the petroleum distillate solvent, or diluent, used to liquefy asphalt cement. Based on the CAPCOA default data contained within CalEEMod, an emission factor of 2.62 pounds of VOC (from asphalt curing) per acre of asphalt material was used to determine VOC emissions from asphalt paving. Another source of construction-related fugitive VOC is architectural coatings. VOC emissions from architectural coatings result from evaporation of volatile compounds present in a coating applied to a structure's surface. Based on the CAPCOA data contained within CalEEMod, an emission factor of 0.012 pounds of VOC (from evaporation) per square foot of coated surface was used to determine VOC emissions from architectural coatings.

4.1.1.2.2 Dispersion Modeling – Construction

Air dispersion modeling is used to predict ground-level ambient air concentrations of pollutants in the vicinity of known air pollutant emission sources. Dispersion modeling of construction emissions was conducted for the proposed Project conditions in the peak year of construction emissions. The analysis was conducted using the American Meteorological Society (AMS)/EPA Regulatory Model (AERMOD) air dispersion model.[35] The peak year of construction emissions includes activities most likely to have an impact on ambient air quality, such as the new Concourse 0 and Terminal 9 along with the new roadways near the intersection of Century Boulevard and Sepulveda Boulevard just east of the LAX CTA. No additional years were analyzed for dispersion modeling.

On-site construction activities were assumed to be located in the following areas:

- On the north airfield for the Taxiway D Extension, the improved exit taxiways from Runway 6L-24R, and the Taxiway D and E improvements related to Concourse 0
- Within the Concourse 0 site east of the exiting north terminals
- On the east end of the south airfield for Taxiway C improvements associated with Terminal 9
- Within the Terminal 9 site east of the existing south terminals, on the east side of Sepulveda Boulevard

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30 U.S. Environmental Protection Agency, *AP-42, Compilation of Air Pollutant Emission Factors, Fifth Edition, Volume I, Section 13.2.1 Paved Roads*, January 2011, *Section 13.2.2 Unpaved Roads*, November 2006, and *Section 13.2.3 Heavy Construction Operations*, January 1995. Available: https://www.epa.gov/air-emissions-factors-and-quantification/ap-42-compilation-air-emissions-factors.

31 South Coast Air Quality Management District, *CEQA Air Quality Handbook*, April 1993; South Coast Air Quality Management District, *Air Quality Analysis Handbook Supplemental Information*, June 2020. Available: http://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook; South Coast Air Quality Management District, *South Coast AQMD Air Quality Significance Thresholds*, April 2019. Available: http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf?sfvrsn=2.

32 California Air Pollution Control Officers Association, *California Emissions Estimator Model, Version 2016.3.2*. Available: http://www.caleemod.com/.

33 A large operation is any active operation on property which contains 50 or more acres of disturbed surface area or any earth-moving operation with a daily earth-moving or throughput volume of 3,850 cubic meters (5,000 cubic yards) or more three times during the most recent 365-day period.

34 South Coast Air Quality Management District, *Rule 403 - Fugitive Dust*, amended June 3, 2005. Available: http://www.aqmd.gov/docs/default-source/rule-book/rule-iv/rule-403.pdf?sfvrsn=4.

35 U.S. Environmental Protection Agency, *AERMOD Modeling System (webpage)*. Available: https://www.epa.gov/scram/air-quality-dispersion-modeling-preferred-and-recommended-models#aermod, accessed August 23, 2020.

- Within the roadway construction areas for the landside improvements, which would be partially co-located with the Terminal 9 construction area, as well as in the east end of the CTA, and in the area east of the Concourse 0 site (approximately between Sepulveda Boulevard and Avion Drive, and between Century Boulevard and 96th Street), which is mostly outside of airport property boundaries

Area or volume sources were used to model construction areas and construction roadway travel. Specifically, the pollutant emissions estimated for the sources noted above were grouped by the source area that each was associated with, based on data in the resource-loaded construction schedule. Each construction area or site was modeled as a polygon area in AERMOD. Construction source parameters were based on the SCAQMD *Localized Significance Threshold Methodology.*[36] Construction equipment exhaust emissions were modeled with a 5-meter release height and a 1.4-meter initial vertical dimension, and construction dust (PM_{10} and $PM_{2.5}$) was modeled at ground level and a 1-meter initial vertical dimension. The results of all sources were summed for each pollutant to obtain the Project's construction activity contribution to ambient concentrations.

4.1.1.2.3 Emission Source Types – Operations

Operations-related criteria pollutant emissions were quantified for CO, VOC, NO_X, SO_2, PM_{10}, and $PM_{2.5}$ for both the existing conditions and the proposed Project's first year of operation.

Sources of operational emissions evaluated in the analysis include aircraft engines and auxiliary power units (APUs); ground support equipment (GSE); ground vehicles used to transport passengers and employees, cargo, and supplies to and from the airport; and stationary sources including water heaters, space heaters, and emergency generators.[37]

4.1.1.2.3.1 Aircraft

Information on the number and types of aircraft operations considered at LAX for existing conditions and future scenarios was developed as part of the forecasts conducted as part of the proposed Project planning effort (**Appendix B**). The aircraft activity levels for existing conditions were based on actual operations in 2018. The aircraft activity levels for future conditions were based on aircraft activity growth forecasts for LAX in 2028.[38] Aircraft activity levels were also developed during the anticipated runway closure in 2023 as part of the construction impact analysis. Aircraft activity levels were used to develop design day flight schedules (DDFS) and airport simulation model (SIMMOD) inputs for aircraft operations for existing and future conditions. The DDFS operations are based on a peak month, average day (PMAD) operating condition and were used to develop the aircraft fleet mix for each year and scenario analyzed. The SIMMOD modeling was used to estimate typical ground taxi/idle times per operation for each scenario, as well as indicate which airport terminal and runway were used by each aircraft under a given scenario. Detailed SIMMOD runs were completed for the existing conditions in 2018, 2023 with and without the temporary runway closure, and 2028 with and without the proposed Project.

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[36] South Coast Air Quality Management District, *Final Localized Significance Threshold Methodology*, Revised July 2008. Available: http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/final-lst-methodology-document.pdf?sfvrsn=2.

[37] The air quality analysis was conducted using the DDFS for all airport operations. Future airport-wide emissions with implementation of the proposed Project were compared to existing emissions. Because this analysis encompassed all airport operations, the evaluation included some sources that would not be directly caused the proposed Project (e.g., cargo operations, passenger-related trips, and the majority of the employee trips [i.e., only a small portion of the employee trips are directly caused by the proposed Project]).

[38] As detailed in Section 2.3.1.2 of Chapter 2, *Description of the Proposed Project*, future growth in aviation activity at LAX is not dependent on, or driven by, the improvements associated with the proposed Project and, therefore, the aircraft activity would not differ between the With Project and Without Project future scenarios.

The SIMMOD analyses of forecasted aircraft activity considered various weather conditions that affect the flight rules (visual or instrument). Visual flight rule conditions dominate the activity at LAX, representing roughly 96 percent of the time. Instrument flight rule conditions represent only 4 percent of the time, but produce the highest emissions from aircraft per hour, due to increased ground delay (idle) time. Therefore, an all-weather annual average operational activity was developed for input to the air quality models. The taxi/idle times were based on the weather-weighted average for all weather conditions.

The criteria pollutant emissions from aircraft were estimated using FAA's Aviation Environmental Design Tool Version 3b (AEDT 3b).[39,40] The DDFS and SIMMOD results were incorporated into AEDT 3b for each scenario. The emission estimates were summarized by several aircraft operational modes for each scenario:

- For departures:
  - Startup = engine startup at the gate, used to estimate hydrocarbon (including VOC) emissions for the first 60 seconds of engine operation (startup mode)
  - Climb Taxi = aircraft taxiing out to runway, assumes engines operating in taxi/idle mode
  - Climb Ground = aircraft takeoff ground roll, assumes engines operating in takeoff mode
  - Climb Below 1,000 = aircraft initial climb above ground level to 1,000 feet, assumes engines operating in takeoff mode
  - Climb Below Mixing Height (also referred to as climb-out) = aircraft climb from 1,000 feet to meteorological mixing height, assumes engines operating in climb-out mode (the annual average mixing height at LAX is 1,806 ft[41])
- For arrivals:
  - Descend Below Mixing Height = aircraft descending below the mixing height, assumes engines operating in approach mode until touchdown
  - Descend Ground = aircraft ground landing ground roll, includes engines in reverse thrust
  - Descend Taxi = aircraft taxiing to the gate, assumes engines operating in taxi/idle mode

As noted above, the SIMMOD results were used to estimate taxi/idle times during taxi-in (descend taxi) and taxi-out (climb taxi) operating modes. AEDT 3b calculates the time-in-mode for the other operating conditions listed above based on wind speed, aircraft type, and – for departures – distance range to destination airport (referred to as stage length[42]). Stage length for arriving aircraft is assumed to be Stage 1.

The aircraft engine emission factors for each engine in the scenario fleet mix are included in the AEDT 3b databases. The AEDT 3b emission factors are primarily based on the International Civil Aviation

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39 Federal Aviation Administration, *Aviation Environmental Design Tool (AEDT) Version 3b*, September 2019. Available: https://aedt.faa.gov/3b_information.aspx, accessed March 26, 2020.

40 An updated version of AEDT, specifically AEDT 3c, was released by the FAA on March 6, 2020; however, the environmental analysis process for this project, including modeling with AEDT 3b, was already well underway at that time. Paragraph 4-2.b. of FAA Order 1050.1F states: "*In the event a model is updated or replaced after the environmental analysis process is underway, the updated or replacement model may be used to provide additional disclosure concerning noise or air quality impacts, but use of the updated or replacement model is not required*." As such, the aircraft noise modeling and aircraft air quality modeling for the project were completed using AEDT 3b.

41 South Coast Air Quality Management District, *Draft Aircraft Emissions Inventory for South Coast Air Quality Management District*, prepared by Integra Environmental Consulting, Inc. Table 3.2.1, August 2016.

42 The stage length is a proxy for the quantity of fuel loaded on the aircraft and approximate weight of the aircraft during arrivals and departures.

Organization (ICAO) Engine Emissions Databank.[43] AEDT 3b uses the ICAO engine emission factors for each engine assigned to aircraft in each scenario to develop emission estimates for operations of the aircraft.

Because analysis of the proposed Project includes forecasts out to 2028, the ICAO Engine Emissions Databank was reviewed and aircraft engine assignments were developed using those engines that were still in production as listed in the databank.

The impact that the ICAO Committee on Aviation Environmental Protection (CAEP) emission standards have had on NO_X emission indices for aircraft engines is demonstrated in **Figure 4.1.1-1**. As shown in the figure, the trendline indicates a reduction in the NO_X emission index of approximately 2 percent per year.

4.1.1.2.3.2 GSE and APU

LAWA collects GSE data annually for the LAX *Ground Support Equipment Emissions Policy* adopted in 2015 and last updated in October 2019.[44] GSE emissions for existing conditions were calculated using the LAX-specific GSE population, approximate engine model year, and fuel type from these data in combination with CARB's OFFROAD2017 model emission factors, activity, load factor, and horsepower data. Future GSE emissions were based on growth of aircraft operations between baseline conditions and 2028 for GSE that service aircraft. Several categories of GSE that maintain the airport, such as sweepers, may grow based on changes in airport infrastructure (e.g., area of runways and taxiways, or terminal area). Because AEDT 3b uses the USEPA MOtor Vehicle Emission Simulator (MOVES)[45] emission factors instead of California OFFROAD2017 emission factors, GSE were incorporated into the AERMOD modeling analysis based on OFFROAD2017 emission factors and anticipated emission reductions associated with LAWA's Memorandum of Understanding with the SCAQMD,[46] discussed in Section 4.1.1.3.1.

Emissions of criteria pollutants from aircraft APUs were estimated using the AEDT 3b APU assignments to aircraft type. Consistent with existing passenger gates at LAX terminals and with the goals of LAWA's Sustainability Action Plan, it was assumed that the new gates at Concourse 0 and Terminal 9 would have pre-conditioned air and gate power supplied by the electrical grid. APU operating times at these gates were assumed to be 15 minutes per landing and takeoff (LTO) turnaround.[47] For parking positions that do not have gate power and pre-conditioned air (such as for remote gates and some cargo aircraft), APU operating times per LTO were assumed to be 40 minutes for narrow-body aircraft, 60 minutes for wide-body aircraft (except the Airbus 380 series), and 120 minutes for the Airbus 380 series.

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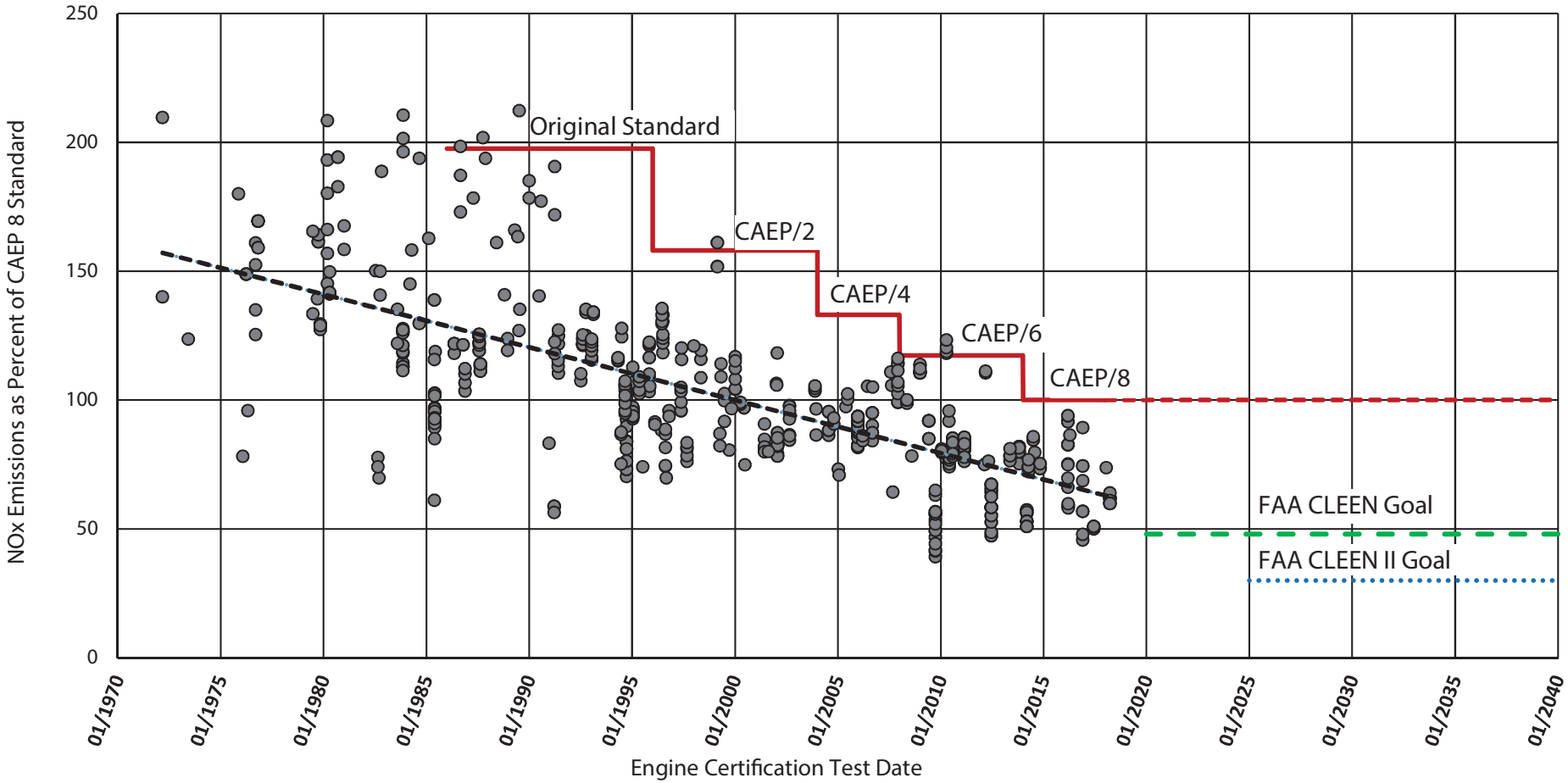
43 International Civil Aviation Organization, *ICAO Aircraft Engine Emissions Databank v. 26B (September 2019)*. Available: https://www.easa.europa.eu/easa-and-you/environment/icao-aircraft-engine-emissions-databank.

44 City of Los Angeles, Los Angeles World Airports, *Ground Support Equipment Emissions Policy*, October 22, 2019. Available: https://www.lawa.org/-/media/lawa-web/environment/files/lax_gse_emission_reduction_policy_boac.ashx.

45 The USEPA's MOtor Vehicle Emission Simulator (MOVES) is a state-of-the-science emission modeling system that estimates emissions for mobile sources at the national, county, and project level for criteria air pollutants, greenhouse gases, and air toxics (U.S. Environmental Protection Agency, *MOVES and Other Mobile Source Emissions Models webpage*. Available: https://www.epa.gov/moves, accessed November 2, 2019).

46 *Memorandum of Understanding between the South Coast Air Quality Management District and the City of Los Angeles Department of Airports*, December 2019. Available: http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/facility-based-mobile-source-measures/mou-la-department-of-airports.pdf?sfvrsn=6.

47 Williams, R.C., Honeywell Engines & Systems, Letter to B. Manning, U.S. EPA Office of Transportation and Air Quality, *Re: APU Emissions*, September 29, 2000.



Legend

- Engine Certification NOx Point
- Original Standard
- FAA CLEEN Goal
- FAA CLEEN II Goal

NOx = Nitrogen Oxides
CAEP = Committee on Aviation Environmental Protection
CLEEN = Continuous Lower Energy, Emissions, and Noise
FAA = Federal Aviation Administration
ICAO = International Civil Aviation Organization
CAEP/# = ICAO CAEP Meeting

Source: ICAO Aircraft Engine Emissions Databank, 2019
Prepared by: CDM Smith, October 2020

LAX Airfield and Terminal Modernization Project	Engine Certification NOx Emission Indices as a Percent of ICAO CAEP/8 Standard	Figure **4.1.1-1**

4.1.1.2.3.3 Ground Access Vehicles (GAV)

Ground access vehicles include on-road motor vehicle activity associated with passengers, air cargo, tenant operations, and airport employee (LAWA and tenant) travel to and from LAX. The general types of vehicles analyzed included privately-owned vehicles, government-owned vehicles, and commercially-owned/operated vehicles such as rental cars, shuttles, buses, taxicabs, transportation network companies (TNCs) like Uber and Lyft, and trucks. The vehicle fleet mix was derived from the proposed Project transportation analysis (see Section 4.8, *Transportation*, and **Appendix G** of this EIR), supplemented by information obtained from CARB's EMFAC2017 model. The EMFAC2017 model also provides pollutant emission factors for engine exhaust, evaporative emissions, tire wear, and brake wear. The transportation analysis provided the number of vehicle trips on the design day (PMAD) as well as the VMT for trips that would begin or end at the airport.

Regional emissions associated with airport-related traffic were calculated for both peak daily and peak annual periods. Emissions were estimated from the EMFAC2017 emission factors, number of trips by vehicle category, and approximate mileage for each trip. The mileage used for estimating emissions was based on all airport-related trip miles within the South Coast Air Basin.

4.1.1.2.3.4 Stationary Sources

The Project would include installation of natural gas heaters for space and water heating in the new concourse and terminal areas. In addition, standby emergency generators would be added to Concourse 0 and Terminal 9 (one generator each). CalEEMod was used to provide the space and water heating energy demand that would be supplied with natural gas heaters. Generator engine size was estimated by the Project design team. Emission factors were obtained from appropriate USEPA AP-42 sections, or from SCAQMD regulations applicable to these sources.

The emissions of criteria pollutants associated with off-airport utility plant operations necessary to support the additional on-airport electricity demand were estimated. Approximately 43 percent of the total power provided by the Los Angeles Department of Water and Power (LADWP) is generated in the South Coast Air Basin.[48] Power production in the South Coast Air Basin is primarily by natural gas-fired power plants. Emissions were calculated using USEPA's AP-42.

4.1.1.2.4 Dispersion Modeling – Operations

Air dispersion modeling is used to predict ground-level ambient air[49] concentrations of pollutants in the vicinity of known air emission sources. Concentrations of criteria air pollutants were determined at publicly-accessible areas on and off airport property and at the property line. The required air dispersion model for analysis of air quality impacts at airports is FAA's AEDT program, which uses USEPA's AERMOD for conducting the dispersion analysis. The source locations were determined from the airport layout plan, maps, aerial photos, and other information provided by LAWA for existing conditions, as well as the plans for the proposed Project. For all sources, modeling source parameters were identified, including any temporal variations in emissions.

The dispersion of emissions from aircraft operations at the airport was modeled as the area source types generated in AEDT 3b. Each aircraft operation was grouped into a combination that represent the (i) operation type (arrival or departure), (ii) starting or ending terminal (or other aircraft parking area), and (iii) runway used, based on the assignments included in the SIMMOD analysis for each scenario. The

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[48] Los Angeles Department of Water and Power, *2017 Power Strategic Long-Term Resource Plan*, December 2017. Available: https://www.ladwp.com/ladwp/faces/ladwp/aboutus/a-power/a-p-integratedresourceplanning?_adf.ctrl-state=k9rvf53qz_51&_afrLoop=11262527660851.

[49] Ambient air is typically considered to be air in locations where the general public has unrestricted access; see 40 CFR 50.1(e), July 1, 2011.

hour-of-day temporal profile for each of the aircraft/terminal/runway combinations was developed from the SIMMOD analysis.

Pollutant emissions from GSE/APU operations were modeled using the source inputs generated by AEDT. The locations of GSE/APU sources are at the terminals and other aircraft parking areas. Pollutant emissions from GSE/APU sources vary throughout the day. The temporal pattern for aircraft was applied to GSE/APU sources at the terminals and other aircraft parking areas.

The locations of ground access sources (traffic and parking) were determined from the airport layout plan, proposed Project drawings and plans, and recent aerial photos. Roadways and parking facilities located within airport property were modeled as area sources. Roadways and parking lots outside of the airport that would be modified (added, reconfigured, or removed) by the proposed Project were also modeled. Temporal patterns (by hour-of-day, day-of-week, and month-of-year) for traffic were estimated from the traffic analysis, supplemented by data used in the aircraft SIMMOD analysis.

Emergency generators and heaters used to supply hot water and comfort space heating in the new concourse and terminal areas were modeled as point sources.

4.1.1.2.5 Other Dispersion Model Inputs

Airport-specific meteorological data were used to analyze air quality impacts. The data set used consisted of five years of hourly surface data collected at LAX for calendar years 2012 through 2016, the most recent data years available from the SCAQMD's on-airport meteorological and air quality monitoring station. This data set, provided by the SCAQMD, included ambient temperature, wind speed, wind direction, atmospheric stability, and mixing height parameters from the appropriate upper air station, and was provided "AERMOD-ready." Because AEDT requires certain intermediate data files that are created when the meteorological data was processed, these intermediate files were also provided by the SCAQMD to be used as inputs to AEDT.[50] Receptor points are the geographic locations where the air dispersion model calculates air pollutant concentrations. These discrete receptors were used to determine air quality impacts in the vicinity of the Project site.[51] Locations of receptors were determined in a manner that would identify peak ambient air pollutant impacts associated with the proposed Project. LAX property line receptors, CTA receptors, and community receptors around LAX were included in the analysis.

Terrain data was obtained from the U.S. Geological Survey. The terrain data were used to set the base elevation for each source and each receptor incorporated into the model.

4.1.1.2.6 Photochemical Modeling; Health Impacts of Secondary Air Pollutants

4.1.1.2.6.1 Background

For project EIRs, CEQA lead agencies typically assess the significance of health impacts associated with criteria air pollutants by comparing emissions of those pollutants and their precursor compounds[52] to significance thresholds developed by the local Air Pollution Control District or Air Quality Management District. The emission thresholds developed by the air districts, which are based on ability to attain and maintain health-based ambient air quality standards, are used to indicate whether the emissions of a given criteria air pollutant from a proposed project are significant. If the emissions are significant, adverse

[50] Sheffer, Melissa, Senior Meteorologist, South Coast Air Quality Management District, Electronic Mail Message to John Pehrson, CDM Smith, *Subject: Re: Secure File Transfer*, August 27, 2019.

[51] Discrete Cartesian receptors are identified by their x (east-west) and y (north-south) coordinates and represent a specific location of interest.

[52] Precursor compounds are directly emitted air pollutants that react in the atmosphere with other compounds to form secondary air pollutants. For example, O_3 is a criteria air pollutant but it is not directly emitted to the atmosphere. O_3 forms from emissions of NO_X and VOC in the presence of sunlight. Another criteria air pollutant – $PM_{2.5}$ – includes directly emitted particles as well as secondary particles formed in the atmosphere from emissions of NO_X, VOC, sulfur compounds, and ammonia (the precursor compounds).

health impacts can be assumed, and the general effects of the pollutant on human health are summarized (see Section 4.1.1.1.1 for a general discussion of human health impacts of different air pollutants).

Pollutants that do not undergo substantial reactions in the atmosphere are analyzed with air dispersion models (such as AERMOD). Dispersion modeling is used to determine the concentration of a given pollutant in the ambient air. The resulting concentration for a given pollutant and averaging period is compared to either ambient air quality standards or to other concentration thresholds developed by the air districts. Modeling of the criteria pollutants CO, NO_2, SO_2, PM_{10} and $PM_{2.5}$ is often conducted for various projects subject to CEQA. As discussed previously, ozone is not directly emitted from project sources; it forms in the atmosphere from emissions of NO_X and VOC in the presence of sunlight. Therefore, analysis of ozone is typically done by comparing the emissions (in pounds per day or tons per year) of its precursor compounds, NO_X and VOC, to the CEQA emission thresholds, in this case, the SCAQMD thresholds noted in Section 4.1.1.4 below.

Similar to ozone, a portion of $PM_{2.5}$ is not directly emitted from project sources but is formed in the atmosphere from emissions of its precursor compounds NO_X, VOC, SO_X, and ammonia. Unlike ozone, a portion of $PM_{2.5}$ is directly emitted from project sources as soot or dust. Therefore, dispersion modeling is used to determine the concentration of directly emitted $PM_{2.5}$ soot and dust in the ambient air and the resulting concentrations compared to either ambient air quality standards or to other concentration thresholds developed by the air districts. In addition, analysis of secondary $PM_{2.5}$ is typically done by comparing the emissions (in pounds per day or tons per year) of its precursor compounds to the CEQA emission thresholds noted in Section 4.1.1.4 below. The Project-related sources do not emit ammonia; therefore, ammonia is not analyzed further for this Project.

In December 2018, the Supreme Court of California rendered a decision indicating that CEQA requires an EIR to contain discussions that correlate the specific human health effects that would occur as a result of a project's significant air pollutant emissions, or explain why such further evaluation is infeasible (Sierra Club v. County of Fresno (2018) 6 Cal.5th 502, 517-522, also referred to as "the Friant Ranch decision").

4.1.1.2.6.2 Recent Evaluations of Secondary Air Pollutant Health Impacts

In light of the Friant Ranch decision, at least two recent Draft EIRs have attempted to assess the number and relative magnitude of the change in human health end-point incidences[53] related to significant emissions increases of ozone and $PM_{2.5}$ precursors: the Draft Environmental Impact Report for Amendment to Norman Y. Mineta San Jose International Airport Master Plan (hereafter referred to as the SJC Master Plan Amendment Draft EIR),[54] and the Draft Environmental Impact Report for the Inglewood Basketball and Entertainment Center Project (hereinafter referred to as the IBEC Draft EIR).[55] These EIRs provide information relevant for assessing the health impacts caused by the proposed Project's increases in secondary air pollutant emissions.

The SJC Master Plan Amendment Draft EIR considers impacts from a commercial airport located in a highly populated region of California, and the IBEC Draft EIR considers impacts from a facility in the same South

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[53] Human health endpoints studied in the SJC Master Plan Amendment Draft EIR and IBEC Draft EIR analyses discussed in this section ranged from acute respiratory symptoms resulting in minor restricted activity days, to mortality from cardiopulmonary (heart-related) and respiratory (lung-related) medical issues. The change in the number of incidences of each health end point due to project-related significant changes in ozone and $PM_{2.5}$ precursor emissions was calculated from regional scale concentration changes using the USEPA's Benefits Mapping and Analysis Program – Community Edition (BenMAP-CE), as noted above.

[54] City of San Jose, *Draft Environmental Impact Report for Amendment to Norman Y. Mineta San Jose International Airport Master Plan,* State Clearinghouse No. 2018102020, prepared by David J. Powers & Associates, Inc., November 2019. Available: https://www.sanjoseca.gov/Home/ShowDocument?id=44618.

[55] City of Inglewood, *Inglewood Basketball and Entertainment Center Project Draft Environmental Impact Report,* State Clearinghouse No. 2018021056, prepared by ESA and Fehr & Peers, December 2019. Available: https://www.cityofinglewood.org/1036/Murphys-Bowl-Proposed-NBA-Arena.

Coast Air Basin as the Project - within three miles of LAX. The IBEC Draft EIR analysis provides substantially useful information regarding the type and level of health impacts that would likely be associated with the proposed Project's secondary ozone and $PM_{2.5}$ precursor emissions.

Norman Y. Mineta San Jose International Airport Master Plan Amendment EIR

In the SJC Master Plan Amendment Draft EIR, the lead agency assessed the potential impact on human health end-points (such as hospitalizations for asthma or pulmonary issues) due to changes in ozone and $PM_{2.5}$ concentrations using a photochemical grid model and a health effects model.

The Comprehensive Air Quality Model with extensions (CAMx) was the selected photochemical grid model. Essentially, CAMx estimates concentrations in a series of 4 kilometer (km) x 4 km grid cells that cover most of Northern and Central California that result from ozone- or $PM_{2.5}$-precursor emissions in those grid cells.

The USEPA's Benefits Mapping and Analysis Program, Community Edition (BenMAP-CE), was used to estimate the number of human health end-point incidences from the changes in ozone or $PM_{2.5}$ concentrations associated with project emissions.

To properly run CAMx for a region, all emissions in the modeling domain must be included. The emissions for the regional analysis were provided by the Bay Area Air Quality Management District (BAAQMD), and modified by the lead agency to update emissions to be appropriate for the time periods considered in the Draft EIR. The CAMx model was run twice, once using regional emissions without the project, and a second time with regional emissions plus project emissions. The difference between the two runs represents the project-related changes in ambient ozone or $PM_{2.5}$ concentrations.

For the SJC Master Plan Amendment Draft EIR, the project-related emissions used in the CAMx analysis included 5,643 lbs/day of NO_X, 57 lbs/day of VOC, and 51 lbs/day of $PM_{2.5}$. The resulting maximum change in ozone concentration at the most impacted location was less than 2 parts per billion (ppb), approximately 2 percent of the baseline value. The impact to human health across the Northern California Domain represented a change of less than 0.05 percent (i.e., less than 5/100ths of one percent) for all human health end-points analyzed. The maximum change in a given end-point was approximately 15 for asthma related emergency room visits per year for people ages 18 to 99 (approximately 0.02 percent change from baseline).

The maximum change in $PM_{2.5}$ concentrations at the most impacted location was also approximately 2 percent of the baseline for the 24-hour average, and slightly less for the annual average. The impact to human health across the Northern California Domain represented a change of less than 0.01 percent (i.e., less than 1/100th of one percent) for all human health end-points analyzed. The maximum change in a given end-point was about 4 for all-cause mortality per year for people ages 30 to 99 (0.0017 percent change from baseline).

Inglewood Basketball and Entertainment Center Project Draft EIR

In the IBEC Draft EIR, the lead agency also assessed the potential impact on human health end-points (such as hospitalizations for asthma or pulmonary issues) due to changes in ozone and $PM_{2.5}$ concentrations using a photochemical grid model and a health effects model. The project analyzed in the IBEC Draft EIR is located just over 3 miles east of the LAX CTA.

The Community Multiscale Air Quality Model (CMAQ) was the selected photochemical grid model. Essentially, CMAQ estimates concentrations in two series of grid cells:

- A 6 km x 6 km grid that extends from south of the California-Mexico border to Bakersfield and from the Channel Islands to the Nevada border
- A 2 km x 2 km fine grid that covers the South Coast Air Basin

The USEPA's BenMAP-CE was used to estimate the number of human health end-point incidences from the changes in ozone or $PM_{2.5}$ concentrations associated with project emissions.

As noted above, to properly run CMAQ for a region, all emissions in the modeling domain must be included. The emissions for the regional analysis were provided by the SCAQMD and modified by the lead agency to update emissions to be appropriate for the time periods considered in the Draft EIR. The CMAQ model was run twice, once using regional emissions without the project, and a second time with regional emissions plus project emissions. The difference between the two runs represents the project-related changes in ambient ozone or $PM_{2.5}$ concentrations.

For the IBEC Project Draft EIR, the highest project-related operational emissions used in the analysis included 99 lbs/day of NO_X, approximately 100 lbs/day of TOG, and 89 lbs/day of $PM_{2.5}$. The resulting maximum change in 8-hour ozone concentration at the most impacted location was 0.0109 ppb, approximately 0.021 percent of the baseline value. In an 800+ square mile area around the IBEC project site, concentration changes ranged from -0.0005 ppb to 0.0109 ppb. The impact of ozone concentration changes to human health across Southern California represented a change of less than 0.0003 percent (i.e., less than 3/10,000ths of one percent) for all human health end-points analyzed. The maximum change in the incidence of a given end-point was approximately 66 for minor restricted activity days per year due to acute respiratory symptoms (approximately 0.00007 percent change from baseline).

Relative to the IBEC Project emissions, the maximum change in $PM_{2.5}$ concentrations at the most impacted location was 0.0011 µg/m^3, approximately 0.0082 percent of the baseline for the 24-hour average. In an 800+ square mile area around the IBEC project site, concentration changes ranged from less than zero for most grids up to 0.011 ppb at the nearest grid. Due to the extremely low concentration changes (less than zero at a majority of the grids) for $PM_{2.5}$, the impact to human health across the South Coast Air Basin modeled by BenMAP-CE was less than zero for all human health end-points. This confirmed that the modeled $PM_{2.5}$ concentrations were within the CMAQ margin of error.

Overall, the IBEC Project Draft EIR noted that the very small differences between regional with project emissions and regional baseline emissions did not provide meaningful information on the project health impacts, and that the regional project health impact changes due to the project may be zero and within the dispersion model's margin of error. Finally, the health impact assessment conducted for the IBEC project, using the best available tools and guidance demonstrated that modeling relatively small (i.e., project-level) changes in emissions with tools developed for large scale regional emissions changes does not provide statistically significant results.

Conclusions and Approach

The findings from both the SJC Master Plan Amendment Draft EIR and the IBEC Project Draft EIR human health impact assessments indicate that the changes in emissions of ozone precursors and $PM_{2.5}$ from a single relatively large project do not "move the dial" with regard to regional human health impacts. The models available to analyze regional impacts are designed to address large, regional changes in emissions, such as those due to proposed emission control regulations that affect emissions across an entire region. Given the uncertainties in emissions, dispersion modeling, and human health concentration-response functions, the conclusion reached in these two studies was that the results to human health impacts were not statistically different than zero (i.e., no change).

The level of effort to conduct these regional dispersion and health impact assessments project-level emissions is substantial in terms of schedule and personnel hours. Given that these full-scale studies noted above found negligible changes to regional health impacts, LAWA has determined that regional dispersion and health impact assessments were not warranted, and a simplified approach for this EIR was used.

For purposes of this EIR, gross emission ratios from the emissions modeled in each of these studies were applied to the construction and operational emissions of the proposed Project. Specifically, the ratio of ozone (and $PM_{2.5}$, if $PM_{2.5}$ emissions exceed the regional emission thresholds) precursor emissions from the proposed Project to those emissions in the SJC Master Plan Amendment Draft EIR and IBEC Draft EIR will be determined. The resulting ratios were multiplied by the incremental health end point incidences determined in those two draft EIRs. The results were used to assess the relative magnitude of health impacts potentially associated with proposed Project operations.

4.1.1.2.7 Existing LAWA Policies and Proposed Project Features

LAWA has developed a number of policies that address environmental issues, including air pollutant emissions, associated with airport project construction and airport operations. Existing policies that may reduce air pollutant emissions are briefly described in Section 4.1.1.3.1 below, under the heading "LAWA Plans and Policies". In addition to complying with these policies, LAWA would incorporate a number of proposed Project design features which also address or reduce environmental impacts. A general description of these features is provided in Section 2.4.5, *Sustainability*. The detailed air pollutant emissions calculations for the existing conditions, future With Project and future Without Project scenarios incorporate those policies and Project features that would be in effect under each scenario. The policies and Project features that were included in the calculations were those with specific targets or other information that could be used to quantify air pollutant emission reductions. The existing policies and Project features that have been incorporated into the unmitigated air pollutant emission calculations include:

- Construction Emissions (these only apply to the proposed Project construction since the other analyzed scenarios – existing conditions and Without Project – do not include construction activity)
  - Watering of construction areas at least three times per day, estimated to reduce fugitive construction dust by 61 percent (Existing Policy – Design and Construction Handbook [DCH][56])
  - Use of off-road construction equipment that complies with USEPA Tier 4 Final engine emission standards (Existing Policy – DCH)
  - Use of on-road construction trucks that comply with USEPA 2010 model year emission standards (Existing Policy – DCH)
  - On-road construction truck idling time limited to five minutes per one-way trip (Existing Policy – DCH)
  - Use of an on-airport concrete batch plant for proposed Project concrete demand, reducing concrete haul truck miles traveled and associated emissions, and including emission controls on batch plant operations as required in LAWA's existing permit (Existing Policy – Permitted Batch Plants)
  - Use of Low-VOC coating and paving material (Existing Policy – DCH)
- Operational Emissions
  - Airfield layout designed to minimize aircraft taxi and delay times (Project Feature, only applied to With Project scenario)
  - Use of hydrant fueling system – As with the existing airport, which uses an extensive hydrant fueling system, hydrant fueling would be included in the new terminal and concourse aircraft

[56] City of Los Angeles, Los Angeles World Airports, *2020 Design and Construction Handbook (DCH), Version 1.0,* June 30, 2020. Available: https://www.lawa.org/en/lawa-businesses/lawa-documents-and-guidelines/lawa-design-and-construction-handbook.

parking positions, which would eliminate the need for large aircraft fueling trucks (Existing Policy and Project Feature, applied to all scenarios)

- Reductions associated with LAWA's existing GSE Policy, applied to GSE emissions for all scenarios (Existing Policy)
- Reduced aircraft APU operating times for gates and other aircraft parking positions with pre-conditioned air and gate power, applied to APU emissions for all scenarios (Existing Policy - DCH)
- Installation of Low-NO_X burners for water heating or space heating in Concourse 0 and Terminal 9 (Project Feature, applied to With Project only)
- Create Connection between LAX and Public Transit (Existing Policy and Project Feature). LAWA is currently constructing the LAX Landside Access Modernization Program that includes an Automated People Mover station adjacent to the future Airport Metro Connector (AMC), which will help support and encourage transit ridership at LAX. The Without Project scenario includes APM stations at the ITF West and in the CTA that are part of the LAX Landside Access Modernization Program. The With Project scenario adds an additional APM station at Terminal 9 that would also help support use of transit by employees and passengers.

Many other LAWA policies and Project features would potentially produce emission reductions, but sufficient information to determine the reduction quantities is not available or verifiable. Those existing policies and Project features that would apply to the Project but whose effects were not quantified are listed below, along with the rationale for not including the measures in the unmitigated air pollutant emission calculations:

- Construction Policies and Project Features
  - Utilize electric grid power for construction equipment instead of using temporary diesel or gasoline generators (Existing Policy - DCH). Availability and accessibility of grid power may not be known until detailed design.
- Operational Policies and Project Features
  - LAWA Alternative Fuel Vehicle Policy and associated incentive program (Existing Policy). The vehicles subject to this policy represent a small portion of the total airport-related traffic volumes studied in this EIR. Determining whether the policy will change the overall fleet mix of motor vehicles coming to LAX was not verifiable.
  - LAWA-Operated Light-Duty Auto and Airfield Bus programs (Existing Policy – AQIM[57]). LAWA purchased 20 electric buses and over 60 electric light duty autos for airport operations. These vehicles represent a very small portion of the total airport-related traffic volumes studied in the EIR. Determining whether the program will change the overall fleet mix of motor vehicles at LAX is not verifiable.
  - Installation of Electric Vehicle (EV) Chargers for Passengers and Employees in compliance with City code (Existing Policy -DCH, and Project Feature). Over 100 EV chargers have been installed at LAX, and the proposed Project would include installation of more chargers in the Terminal 9 parking structure in compliance with City code. Installation of EV chargers would not directly reduce emissions but would encourage use of electric vehicles for travel to and from the airport.

[57] As discussed below in Section 4.1.1.3.1, in December 2019, LAWA entered into a voluntary Memorandum of Understanding (MOU) with the SCAQMD under which LAWA developed Air Quality Improvement Measures (AQIM) to further reduce air pollutant emissions from non-aircraft sources operating at LAX.

- Achieve Leadership in Energy and Environmental Design (LEED®) Silver requirements for Concourse 0 and Terminal 9 (Existing Policy – DCH, Project Feature). LAWA would require the design and construction of Concourse 0 and Terminal 9 achieve LEED® Silver requirements, at a minimum, in accordance with LAWA's adopted the *Sustainable Design and Construction Policy*.[58] Since multiple options can be implemented to meet those requirements, specific quantification of emission reductions was not attempted.
- LAWA Employee Rideshare Program (Existing Policy). LAWA provides incentives to its employees to use alternative means to travel to the airport for work. The reduced vehicles represent a small portion of the total airport-related traffic volumes studied in the EIR. Determining whether the program changes the overall volume of motor vehicles at LAX may not be verifiable.

4.1.1.3 Existing Conditions

4.1.1.3.1 Regulatory Setting

Air quality is regulated by federal, state, and local laws. In addition to rules and standards contained in the Federal Clean Air Act (CAA) and the California Clean Air Act (CCAA), air quality in the Los Angeles region is subject to the rules and regulations established by CARB and SCAQMD, with oversight provided by the USEPA, Region IX.

4.1.1.3.1.1 Federal

The USEPA is responsible for implementation of the CAA. The first substantial version of the CAA, with enforceable requirements, was enacted in 1970 and has been amended significantly in subsequent years (1977 and 1990). Under the authority granted by the CAA, USEPA has established National Ambient Air Quality Standards (NAAQS) for the following criteria pollutants: O_3, NO_2, CO, SO_2, PM_{10}, and $PM_{2.5}$. Primary NAAQS are developed to provide human health protection, including protecting the health of sensitive populations, such as people with asthma, children, and the elderly. Establishing the NAAQS is a lengthy process that includes science policy workshops, Integrated Science Assessments, Risk/Exposure Assessments, and Policy Assessments. The NAAQS are periodically updated to ensure they continue to provide adequate health and environmental protection.

Table 4.1.1-1 presents the NAAQS that are currently in effect for criteria air pollutants. As discussed previously, O_3 is a secondary pollutant, meaning that it is formed from reactions of "precursor" compounds under certain conditions. The primary precursor compounds that can lead to the formation of O_3 are VOCs and NO_X.

[58] City of Los Angeles, Los Angeles World Airports, *LAWA Sustainable Design and Construction Policy*, September 7, 2017. Available: https://www.lawa.org/-/media/lawa-web/tenants411/file/lawa-sustainable-design-and-construction-policy.ashx.

Table 4.1.1-1
National and California Ambient Air Quality Standards (NAAQS and CAAQS)

Pollutant	Averaging Periods	CAAQS[a]	NAAQS	
			Primary	Secondary
Ozone (O_3)	8-Hour	0.070 ppm (137 µg/m³)	0.070 ppm[c] (137 µg/m³)	Same as Primary
	1-Hour	0.09 ppm (180 µg/m³)	N/A	N/A
Carbon Monoxide (CO)	8-Hour	9.0 ppm (10 mg/m³)	9 ppm[b] (10 mg/m³)	N/A
	1-Hour	20 ppm (23 mg/m³)	35 ppm[b] (40 mg/m³)	N/A
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	0.030 ppm (57 µg/m³)	0.053 ppm[b] (100 µg/m³)	Same as Primary
	1-Hour	0.18 ppm (339 µg/m³)	0.100 ppm[d] (188 µg/m³)	N/A
Sulfur Dioxide (SO_2)	24-Hour	0.04 ppm (105 µg/m³)	N/A	N/A
	3-Hour	N/A	N/A	0.5 ppm[b] (1,300 µg/m³)
	1-Hour	0.25 ppm (655 µg/m³)	0.075 ppm[e] (196 µg/m³)	N/A
Respirable Particulate Matter (PM_{10})	Annual Arithmetic Mean	20 µg/m³	N/A	N/A
	24-Hour	50 µg/m³	150 µg/m³ [b]	Same as Primary
Fine Particulate Matter ($PM_{2.5}$)	Annual Arithmetic Mean	12 µg/m³	12.0 µg/m³ [b]	15 µg/m³
	24-Hour	N/A	35 µg/m³ [f]	Same as Primary
Lead (Pb)	Rolling 3-Month Average	N/A	0.15 µg/m³ [b]	Same as Primary
	30-Day Average	1.5 µg/m³	N/A	N/A
Visibility Reducing Particles	8-Hour	Extinction of 0.23 per kilometer	N/A	N/A
Sulfates	24-Hour	25 µg/m3	N/A	N/A

Source: California Air Resources Board, *Ambient Air Quality Standards*, May 4, 2016. Available: https://ww3.arb.ca.gov/research/aaqs/aaqs2.pdf.

Notes:

[a] California standards for O_3, CO, SO_2, NO_2, PM_{10}, $PM_{2.5}$, and visibility are not to be exceeded. California standards for Pb and sulfates are not to be equaled or exceeded.

[b] National standards for CO, SO_2 (secondary), PM_{10}, and Pb are not to be exceeded more than once per year. National annual standards for NO_2 and $PM_{2.5}$ are not to be exceeded.

[c] National standard for O_3 is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over 3 years, is equal to or less than the standard.

[d] National standard for 1-Hour NO_2 is attained when the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site do not exceed the standard.

[e] National standard for 1-Hour SO_2 is attained when the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site do not exceed the standard.

[f] National standard for 24-Hour $PM_{2.5}$ is attained when the 3-year average of the annual 98th percentile of the daily maximum concentrations at each site do not exceed the standard.

Key:
CAAQS = California Ambient Air Quality Standards; NAAQS = National Ambient Air Quality Standards; mg/m³ = milligrams per cubic meter; N/A = Not applicable: ppm = parts per million (by volume); µg/m³ = micrograms per cubic meter

The CAA also specifies future dates for achieving compliance with the NAAQS and mandates that states submit and implement a State Implementation Plan (SIP) for local areas not meeting these standards. These plans must include pollution control measures that demonstrate how the standards will be met. The 1990 amendments to the CAA identify specific emission reduction goals for areas not meeting the NAAQS. These amendments require both a demonstration of reasonable further progress toward attainment and incorporation of additional sanctions for failure to attain or meet interim milestones.

LAX is located in the South Coast Air Basin, which is designated as a federal nonattainment area for O_3, $PM_{2.5}$, and Pb. Nonattainment designations under the CAA for O_3 and $PM_{2.5}$ are classified into levels of severity based on the level of concentration above the standard, which is also used to set the required attainment date. The South Coast Basin is classified as an extreme nonattainment area for O_3 and a serious nonattainment area for $PM_{2.5}$. The South Coast Air Basin was redesignated to attainment/maintenance for NO_2 in 1998, for CO in 2007, and for PM_{10} in 2013. A designation of attainment/maintenance means that the pollutant is currently in attainment (i.e., meets standards) and that measures are included in the SIP to ensure that the NAAQS for that pollutant are not exceeded again (maintained). Most recently, the South Coast Air Basin was also found to attain the 1997 $PM_{2.5}$ NAAQS;[59] however, the South Coast Air Basin remains a nonattainment area for the 2006 daily and 2012 annual $PM_{2.5}$ NAAQS. The attainment status with regard to the NAAQS is presented in **Table 4.1.1-2** for each criteria pollutant.

Table 4.1.1-2
South Coast Air Basin Attainment Status

Pollutant	Federal Standards (NAAQS)[a]	California Standards (CAAQS)[b]
Ozone (O_3)	Nonattainment – Extreme	Nonattainment
Carbon Monoxide (CO)	Attainment – Maintenance	Attainment
Nitrogen Dioxide (NO_2)	Attainment – Maintenance	Attainment
Sulfur Dioxide (SO_2)	Attainment	Attainment
Respirable Particulate Matter (PM_{10})	Attainment – Maintenance	Nonattainment
Fine Particulate Matter ($PM_{2.5}$)	Nonattainment – Serious[c, d]	Nonattainment
Lead (Pb)	Nonattainment	Attainment

Sources: U.S. Environmental Protection Agency, *Green Book Nonattainment Areas*. Available: https://www.epa.gov/green-book, accessed October 2019; California Air Resources Board, *Area Designations Maps/State and National*. Available: https://www.arb.ca.gov/desig/adm/adm.htm, accessed October 2019; U.S. Environmental Protection Agency, *Clean Data Determination for 1997 $PM_{2.5}$ Standards; California-South Coast; Applicability of Clean Air Act Requirements,* Federal Register, Vol. 81, No. 142, p. 48350, effective August 24, 2016.

Notes:
[a] Status as of October 23, 2019.
[b] Status as of October 23, 2019.
[c] Classified as moderate nonattainment for 1997 NAAQS, moderate nonattainment for 2012 NAAQS, and serious nonattainment for 2006 NAAQS.
[d] Although formally classified as moderate nonattainment for the 1997 NAAQS, the South Coast Air Basin received a clean data determination, having achieved attainment levels for the 1997 NAAQS as of August 24, 2016.

4.1.1.3.1.2 State

The CCAA, signed into law in 1988, requires all areas of the State to achieve and maintain the California Ambient Air Quality Standards (CAAQS) by the earliest practicable date. The CAAQS are generally as

[59] U.S. Environmental Protection Agency, *Clean Data Determination for 1997 $PM_{2.5}$ Standards; California-South Coast; Applicability of Clean Air Act Requirements*, Federal Register, Vol. 81, No. 142, pp. 48350-48356, effective August 24, 2016.

stringent as, and in several cases more stringent than, the NAAQS.[60] The currently applicable CAAQS are presented with the NAAQS in Table 4.1.1-1. The attainment status with regard to the CAAQS is presented in Table 4.1.1-2 for each criteria pollutant. CARB has jurisdiction over a number of air pollutant emission sources that operate in the State. Specifically, CARB has the authority to develop emission standards for on-road motor vehicles (with USEPA approval),[61] as well as for stationary sources and some off-road mobile sources. In turn, CARB has granted authority to the regional air pollution control and air quality management districts to develop stationary source emission standards, issue air quality permits, and enforce permit conditions.

In June 2019, CARB adopted the Zero-Emission Airport Shuttle Regulation, which will be applicable to airport shuttle operators at LAX and 12 other California airports. The rule was identified as a control measure in the South Coast 2016 Air Quality Management Plan (2016 AQMP) discussed below. Airport shuttle operators will be required to transition to 100 percent zero-emission vehicle (ZEV) technologies starting in 2027 and to complete the transition by 2035.[62]

4.1.1.3.1.3 Regional

South Coast Air Quality Management District

SCAQMD has jurisdiction over an area of 10,743 square miles consisting of Orange County and the urban, non-desert portions of Los Angeles, Riverside, and San Bernardino counties, and the Riverside County portions of the Salton Sea Air Basin and Mojave Desert Air Basin. The South Coast Air Basin is a sub-region of SCAQMD's jurisdiction and covers an area of 6,745 square miles. Although air quality in this area has improved, the South Coast Air Basin requires continued diligence to meet air quality standards.

The SCAQMD adopted a series of Air Quality Management Plans (AQMPs) to meet the CAAQS and NAAQS. The most recent AQMP adopted by SCAQMD and CARB, and approved by USEPA, is the 2016 AQMP. The 2016 AQMP is briefly discussed below.

SCAQMD adopted the 2016 AQMP on March 3, 2017;[63] it was approved by USEPA in 2019.[64] It incorporates the latest scientific and technology information and planning assumptions, including those consistent with the 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS)[65] measures adopted by the Southern California Association of Governments (SCAG) on April 7,

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60 The numerical value of the NO_2 and SO_2 1-hour CAAQS is less stringent than the NAAQS value; however, the form of the CAAQS is different than the form of the NAAQS. The CAAQS is attained for both pollutants when measured concentrations never exceed the CAAQS value. The 1-hour NO_2 NAAQS is attained when the 98th percentile of measured maximum 1-hour daily concentrations, averaged over three years, is less than the NAAQS. The 1-hour SO_2 NAAQS is attained when the 99th percentile of measured maximum 1-hour daily concentrations, averaged of three years, is less than the NAAQS. Therefore, the CAAQS and NAAQS are not directly comparable.

61 As part of the Safer, Affordable, Fuel-Efficient (SAFE) Vehicles Rule ("One National Program Rule"), promulgated by USEPA and the National Highway Traffic Safety Administration (NHTSA) in September 2019, the federal government withdrew the CAA preemption waiver that allows California to set its own tailpipe emission standards. California, along with numerous other states, cities, and counties, responded by filing a lawsuit to reverse the decision. The status of the litigation is outstanding. The SAFE Vehicles Rule Part II rulemaking, finalized on March 31, 2020, sets fuel economy and carbon dioxide standards that increase 1.5 percent in stringency each year from model years 2021 through 2026. These standards apply to light-duty vehicles and represent a substantial reduction in stringency as compared to previously established increase in stringency of 5 percent each year from model years 2021 through 2026.

62 California Air Resources Board, *Zero-Emission Airport Shuttle Regulation Factsheet*, October 2019. Available: https://ww2.arb.ca.gov/sites/default/files/2019-10/asb_reg_factsheet.pdf.

63 South Coast Air Quality Management District, *Final 2016 Air Quality Management Plan (AQMP),* March 3, 2017. Available: http://www.aqmd.gov/home/air-quality/clean-air-plans/air-quality-mgt-plan/final-2016-aqmp.

64 U.S. Environmental Protection Agency, *Approval and Promulgation of Implementation Plans: California: South Coast Serious Area Plan for the 2006 $PM_{2.5}$ NAAQS – Final Rule,* 84 FR 3305, February 12, 2019. Available: https://www.govinfo.gov/content/pkg/FR-2019-02-12/pdf/2019-01922.pdf; and U.S. Environmental Protection Agency, *Approval of Air Quality Implementation Plans: California: South Coast Air Basin; 1-Hour and 8-Hour Ozone Nonattainment Area Requirements – Final Rule,* 84 FR 52005, June 17, 2019. Available: https://docs.regulations.justia.com/entries/2019-06-17/2019-12176.pdf.

65 Southern California Association of Governments, *2016-2040 Regional Transportation Plan/Sustainable Communities Strategy: A Plan for Mobility, Accessibility, Sustainability and a High Quality of Life*, adopted April 7, 2016. Available: http://scagrtpscs.net/Documents/2016/final/f2016RTPSCS.pdf.

2016, as well as updated emission inventory methodologies for various source categories. As discussed below, SCAG has released the Final 2020-2045 RTP/SCS, known as Connect SoCal. SCAQMD has initiated the process for developing the 2022 AQMP, which will provide an approach (plan) to attain the 70 ppb 8-hour ozone NAAQS adopted by USEPA in 2015. The South Coast Air Basin was designated as extreme non-attainment (see Table 4.1.1-2) of this NAAQS in 2018. LAWA will be providing aircraft/APU and potentially GSE emission inventories to SCAQMD for the 2022 AQMP.

The 2016 AQMP incorporates a comprehensive strategy aimed at controlling pollution from all sources, including stationary sources, and on-road and off-road mobile sources. The 2016 AQMP builds upon improvements in previous plans, and includes new and changing federal requirements, implementation of new technology measures, and the continued development of economically sound, flexible compliance approaches. In addition, it highlights the significant amount of emission reductions needed and the urgent need to identify additional strategies, especially in the area of mobile sources, to meet all federal criteria pollutant standards within the timeframes allowed under the federal CAA.

The 2016 AQMP's key undertaking is to bring the South Coast Air Basin into attainment with the following standards:

- 8-hour 80 parts per billion (ppb) Ozone NAAQS by 2023 (adopted in 1997)
- 8-hour 75 ppb Ozone NAAQS by 2031 (adopted in 2008)
- 1-hour 120 ppb Ozone NAAQS by 2022 (adopted in 1979)
- 24-hour 35 µg/m^3 $PM_{2.5}$ NAAQS by 2019 (adopted in 2006)
- Annual 12 µg/m^3 $PM_{2.5}$ NAAQS by 2025 (adopted in 2012)

The overall control strategy is an integrated approach relying on fair-share emission reductions from federally-, state-, and locally-regulated sources. The 2016 AQMP is composed of stationary and mobile source emission reductions from (1) traditional regulatory control measures, (2) incentive-based programs, (3) co-benefits from climate programs, (4) mobile source strategies, and (5) reductions from federally-controlled sources, which include aircraft, locomotives, and ocean-going vessels. These strategies are to be implemented in partnership with CARB and USEPA. The SCAG-approved 2016 RTP/SCS transportation programs, measures, and strategies, which are generally designed to reduce VMT, are included within baseline emissions.

LAWA provided baseline and forecasted airport emission inventories to SCAQMD for LAX, Van Nuys Airport, and Ontario International Airport (which was then under LAWA's jurisdiction), and the aircraft emissions from these inputs were included in the 2016 AQMP. The 2016 AQMP includes several future air pollution control measures to be developed and implemented by CARB. These measures include state regulations potentially requiring zero-emission GSE and zero-emission airport shuttle buses in the future.

The SCAQMD also adopts rules to implement portions of the AQMP. Several previously adopted rules are applicable to the construction of the proposed Project, as well as to stationary sources being relocated or replaced as part of the proposed Project. SCAQMD Rule 403[66] requires the implementation of best available fugitive dust control measures during active construction activities capable of generating fugitive dust emissions from on-site earth-moving activities, construction/demolition activities, and construction equipment travel on paved and unpaved roads. SCAQMD Rule 1113[67] limits the amount of VOCs from architectural coatings in solvents, which lowers the emissions of odorous compounds. LAWA holds a Title V permit for LAWA-owned stationary sources at LAX, and the proposed Project would potentially add

[66] South Coast Air Quality Management District, *Rule 403 – Fugitive Dust*, amended June 3, 2005. Available: http://www.aqmd.gov/docs/default-source/rule-book/rule-iv/rule-403.pdf?sfvrsn=4.

[67] South Coast Air Quality Management District, *Rule 1113 – Architectural Coatings*, amended February 5, 2016. Available: http://www.aqmd.gov/docs/default-source/rule-book/reg-xi/r1113.pdf?sfvrsn=17.

new combustion equipment for space heating, water heating, and emergency power generation. Therefore, Regulation II – Permits[68] and Regulation XXX – Title V Permits[69] would apply to new stationary equipment associated with the proposed Project facilities. Other source-specific rules may also apply to the new stationary equipment.

Southern California Association of Governments

SCAG is the metropolitan planning organization (MPO) for Los Angeles, Orange, Ventura, Riverside, San Bernardino, and Imperial counties and serves as a forum for the discussion of regional issues related to transportation, the economy, community development, and the environment. As the federally-designated MPO for the Southern California region, SCAG is mandated by the federal government to research and develop plans for transportation, hazardous waste management, and air quality. Pursuant to California Health and Safety Code Section 40460(b), SCAG has the responsibility for preparing and approving the portions of the AQMP relating to regional demographic projections and integrated regional land use, housing, employment, and transportation programs, measures, and strategies. SCAG is also responsible under the CAA for determining conformity of federally-funded surface transportation projects, plans, and programs with the State Implementation plan, which integrates applicable air quality plans. With regard to air quality planning, SCAG's 2020-2045 RTP/SCS addresses regional development and growth forecasts. SCAG released the Proposed Final 2020-2045 RTP/SCS, known as Connect SoCal, for Regional Council adoption on May 7, 2020. On that date, the SCAG Regional Council adopted Resolution No. 20-621-1 certifying the Connect SoCal Program Environmental Impact Report (PEIR) and approving Connect SoCal for the limited purpose of transportation conformity to meet the Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) June 1, 2020 submittal deadline as required by the CAA. The FHWA and FTA approved the Transportation Conformity portion of the plan on June 5, 2020.[70] The SCAG Regional Council formally adopted the Final 2020-2045 RTP/SCS on September 3, 2020.[71,72] The final adopted plan did not recommend any changes to the policies or strategies in the plan from the Proposed Final.[73]

4.1.1.3.1.4 LAWA Plans and Policies

As discussed in Section 4.1.1.2.7, LAWA has adopted a number of programs aimed at promoting sustainability in airport construction and operations. Many of these programs include requirements aimed at reducing air pollutant emissions.

LAWA's Sustainable Design and Construction Policy, adopted in September 2017, requires that new buildings and major building renovation projects at LAX be designed to achieve the U.S. Green Building Council's (USGBC) LEED® Silver certification, at a minimum, unless an exemption is provided.[74] Silver certification mandates that energy efficiency features be incorporated into new construction, which

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68 South Coast Air Quality Management District, *Regulation II – Permits*. Available: http://www.aqmd.gov/home/rules-compliance/rules/scaqmd-rule-book/regulation-ii.

69 South Coast Air Quality Management District, *Regulation XXX – Title V Permits*. Available: http://www.aqmd.gov/home/rules-compliance/rules/scaqmd-rule-book/regulation-xxx.

70 U.S. Department of Transportation, Federal Highway Administration. *Re: Southern California Association of Governments Connect SoCal Regional Transportation Plan/Sustainable Communities Strategy, 2019 Federal Transportation Improvement Program Amendment 19-12 and associated conformity determination*. June 5, 2020. Available: http://ftip.scag.ca.gov/Documents/SCAGFF12_060520.PDF.

71 Southern California Association of Governments, *Press Release – SCAG Regional Council formally adopts Connect SoCal*. September 3, 2020. Available: http://scag.ca.gov/Documents/PR-SCAG-ConnectSoCal.pdf.

72 Southern California Association of Governments, *Connect SoCal: The 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy of the Southern California Association of Governments,* adopted September 3, 2020. Available: https://www.connectsocal.org/Documents/Adopted/0903fConnectSoCal-Plan.pdf.

73 Southern California Association of Governments, *Connect SoCal Update*, July 2, 2020. Available: https://www.connectsocal.org/Documents/Agendas/rc070220agn04.pdf.

74 City of Los Angeles, Los Angeles World Airports, *LAWA Sustainable Design and Construction Policy*, September 7, 2017. Available: https://www.lawa.org/-/media/lawa-web/tenants411/file/lawa-sustainable-design-and-construction-policy.ashx.

would reduce criteria pollutant and greenhouse gas emissions. In addition, all new construction, including the proposed terminal improvements as well as the north airfield and landside improvements that are not eligible for LEED® designation, must comply with other Sustainable Design and Construction Policy requirements, including provisions that reduce emissions during construction and operations.

In December 2019, LAWA entered into a voluntary Memorandum of Understanding (MOU) with the SCAQMD. During the negotiations with SCAQMD on the MOU, LAWA developed Air Quality Improvement Measures (AQIM) to further reduce air pollutant emissions from non-aircraft sources operating at LAX. The intent of the MOU is to provide voluntary emissions reductions that can be applied to the South Coast Ozone SIP, as updated with the 2016 South Coast AQMP.[75] One component identified in the MOU is the enhanced GSE Emission Reduction Policy,[76] with new GSE airport-wide emission factor targets to be achieved at rates faster than are required under existing off-road equipment standards by 2023 and 2031. Further, these new airport-wide emission factor targets have been formally adopted by the City of Los Angeles Board of Airport Commissioners (BOAC) as an update to the existing GSE policy and would apply to all GSE used at Concourse 0 and Terminal 9.

Also included in the SCAQMD-LAWA MOU is the allocation of $500,000 incentive funds from LAWA to its tenants for conversion of conventional fueled vehicles to cleaner technologies. These funds are allocated to the LAWA Alternative Fuel Vehicle Policy. Also, the LAX Alternative Fuel Vehicle Policy was recently strengthened to require that medium- and heavy-duty vehicles operating at LAX use clean fuels/technologies and be less than 13 years old.

In addition, as discussed in Section 4.1.1.2.7, the proposed Project would comply with LAWA's DCH,[77] which includes policies and requirements aimed at reducing environmental impacts associated with construction projects at LAX, including air pollutant and greenhouse gas emissions, among others. Key provisions in the DCH that pertain to reducing air pollutant emissions and have been incorporated into the emissions calculations to the extent feasible include the following:

- Contractors shall post a publicly-visible sign(s) with contact person and telephone number for dust complaints to ensure implementation of fugitive dust control measures. This person shall respond and take corrective action, if necessary, within 24 hours.
- Contractors shall provide vehicle tracking controls at construction staging area access road entrances to reduce entrained dust.
- Contractors shall be responsible for continuous cleanup of all construction-related dirt on approach routes to the construction site and, when requested by LAWA, contractors shall furnish and operate a self-loading motor sweeper with spray nozzles at least once each working day for the purpose of keeping paved areas acceptably clean wherever construction is incomplete.
- During construction, contractor shall demonstrate that all unpaved ground surfaces are covered or treated sufficiently to minimize fugitive dust emissions.
- During construction, contractor shall use adequate watering techniques to alleviate accumulation of construction-generated dust and shall comply with SCAQMD Rule 403 – Fugitive Dust.
- Idling or queuing of diesel-fueled vehicles and equipment shall be limited to five minutes.

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75 *Memorandum of Understanding between the South Coast Air Quality Management District and the City of Los Angeles Department of Airports*, December 2019. Available: http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/facility-based-mobile-source-measures/mou-la-department-of-airports.pdf?sfvrsn=6.

76 The MOU enhances the LAX GSE Emissions Reduction Policy originally adopted in 2015, which was the first policy of its kind in the nation. The enhanced policy has more stringent emission factor targets and extends to policy requirements to 2031.

77 City of Los Angeles, Los Angeles World Airports, *2020 Design and Construction Handbook (DCH), Version 1.0,* June 30, 2020. Available: https://www.lawa.org/en/lawa-businesses/lawa-documents-and-guidelines/lawa-design-and-construction-handbook.

- Every effort shall be made to utilize grid-based electric power at any construction site, where feasible. Grid-based power can be from a direct hookup or a tie in to electricity from power poles.
- Trucks with a gross vehicle weight rating of 14,001 pounds shall be required to comply with USEPA 2010 emissions standards or next cleanest vehicle available, as approved by LAWA. In addition, off-road diesel-powered equipment are required to meet USEPA Tier 4(final) standards or the next cleanest equipment available, as approved by LAWA, with some exceptions.
- Material and debris haul trucks shall be constructed, or contents covered, such that the material or debris does not sift, blow, leak, spill, or otherwise escape from the vehicle.
- Speed limits on unpaved construction sites shall be limited to 15 miles per hour, and haul vehicles shall maintain at least six inches of freeboard.
- Construction staging and parking of construction vehicles (including workers' vehicles) shall be prohibited on streets adjacent to schools, daycare centers, and hospitals.
- Haul routes shall be located away from residential areas.
- All new aircraft parking positions shall be installed with ground power and pre-conditioned air, where applicable, as coordinated and approved by LAWA Environmental Programs Group (EPG).
- New LAWA or tenant building construction or renovation projects shall meet one of the following:
  - LEED® Silver certification if the project meets the U.S. Green Building Code (USGBC) and LAWA LEED® Eligibility Criteria, unless exempted by LAWA's Sustainability Review Committee,
  - Los Angeles Green Building Code (LAGBC) Tier 1 requirements if not eligible for LEED® certification, or
  - LAWA Sustainable Design and Construction requirements if not eligible for LEED® certification and unable to meet LAGBC Tier 1 requirements.
- LAWA or tenant non-building projects shall meet LAWA Sustainable Design and Construction requirements if not eligible for or exempted from LEED® certification. Typical airport non-building projects include: runways, taxiways, and other airfield flatwork; roadways, bridges and tunnels; pavement rehabilitation; civil infrastructure/site utility work; exterior lighting; and landscaping.

LAWA continues to reduce its impact on air pollutant emissions in the South Coast Air Basin by continuing to convert airport vehicles to electric power. Over 60 electric Chevy Bolts have been delivered to replace conventional fuel LAWA sedans. In addition, twenty 60-foot all-electric airfield buses have been ordered to begin replacing the diesel fuel airfield bus fleet.

LAWA continues to look for additional opportunities to reduce airport emissions and improve its sustainability. LAWA'S most recent outline of emissions reduction and sustainability goals are addressed in the airport's Sustainability Action Plan (SAP), which was adopted in November 2019.[78] The SAP builds upon past LAWA emission reduction and sustainability efforts and programs, and aligns the airport with Mayor Eric Garcetti's Green New Deal. The SAP goals are aimed at organization-wide improvements and are not intended or designed to be applied on an individual project-by-project basis.[79]

Other Related Rules and Policies

In the South Coast Air Basin, the City of Los Angeles, CARB, and the SCAQMD have adopted or proposed additional rules and policies governing the use of cleaner fuels in public vehicle fleets. CARB adopted a

[78] City of Los Angeles, Los Angeles World Airports, *Sustainability Action Plan*, 2019. Available: https://cloud1lawa.app.box.com/s/63i2teszgnld5aws68xbou6yc0inl5rp.

[79] City of Los Angeles, Los Angeles World Airports, *Sustainability Action Plan*, 2019. Available: https://cloud1lawa.app.box.com/s/63i2teszgnld5aws68xbou6yc0inl5rp.

Risk Reduction Plan for diesel-fueled engines and vehicles.[80] The SCAQMD adopted a series of rules that would require the use of clean fuel technologies in on-road transit buses, on-road public fleet vehicles, airport taxicabs and shuttles, trash trucks, and street sweepers.[81]

4.1.1.3.2 Environmental Setting

4.1.1.3.2.1 Climatological Conditions

LAX is located within the South Coast Air Basin, a 6,745-square-mile area encompassing all of Orange County and the urban, non-desert portions of Los Angeles, Riverside, and San Bernardino Counties. The meteorological conditions at the airport are heavily influenced by its proximity to the Pacific Ocean to the west and the mountains to the north and east. This location tends to produce a regular daily reversal of wind direction; onshore (from the west) during the day and offshore (from the east) at night. Comparatively warm, moist Pacific air masses drifting over cooler air resulting from coastal upwelling of cooler water often form a bank of fog that is generally swept inland by the prevailing westerly (i.e., from the west) winds. The "marine layer" is generally 1,500 to 2,000 feet deep, extending only a short distance inland and rising during the morning hours producing a deck of low clouds. The air above is usually relatively warm, dry, and cloudless. The prevalent temperature inversion in the South Coast Air Basin tends to prevent vertical mixing of air through more than a shallow layer.[82]

A dominating factor in California weather is the semi-permanent high-pressure area of the North Pacific Ocean. This pressure center moves northward in summer, holding storm tracks well to the north, and minimizing precipitation. Changes in the circulation pattern allow storm centers to approach California from the southwest during the winter months and large amounts of moisture are carried ashore. The Los Angeles region receives on average 10 to 15 inches of precipitation per year, of which 83 percent occurs during the months of November through March. Thunderstorms are light and infrequent, and on very rare occasions, trace amounts of snowfall have been reported at the airport.

The annual minimum mean, maximum mean, and overall mean temperatures at the airport are 56 degrees Fahrenheit (°F), 70°F, and 63°F, respectively. The prevailing wind direction at the airport is from the west-southwest with an average wind speed of roughly 6.4 knots (7.4 miles per hour [mph] or 3.3 meters per second [m/s]). Maximum recorded gusts range from 27 knots (31 mph or 13.9 m/s) in July to 56 knots (64 mph or 28.6 m/s) in March. The monthly average wind speeds range from 5.3 knots (6.1 mph or 2.7 m/s) in November to 7.6 knots (8.7 mph or 3.9 m/s) in April.[83]

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80 California Air Resources Board, Stationary Source Division, Mobile Source Control Division, *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*, October 2000. Available: http://www.arb.ca.gov/diesel/documents/rrpfinal.pdf.

81 South Coast Air Quality Management District, *Rule 1186.1 – Less-Polluting Sweepers*, amended January 9, 2009. Available: http://www.aqmd.gov/docs/default-source/rule-book/reg-xi/rule-1186-1-less-polluting-sweepers.pdf?sfvrsn=4; South Coast Air Quality Management District, *Rule 1191 – Clean On-Road Light- and Medium-Duty Public Fleet Vehicles*, adopted June 16, 2000. Available: http://www.aqmd.gov/docs/default-source/rule-book/reg-xi/rule-1191.pdf?sfvrsn=4; South Coast Air Quality Management District, *Rule 1192 – Clean On-Road Transit Buses*, adopted June 16, 2000. Available: http://www.aqmd.gov/docs/default-source/rule-book/reg-xi/rule-1192.pdf?sfvrsn=4; South Coast Air Quality Management District, *Rule 1193 – Clean On-Road Residential and Commercial Refuse Collection Vehicles*, amended July 9, 2010. Available: http://www.aqmd.gov/home/rules-compliance/rules/fleet-rules/refuse-collection-vehicles; South Coast Air Quality Management District, *Rule 1194 – Commercial Airport Ground Access*, amended October 20, 2000. Available: http://www.aqmd.gov/docs/default-source/rule-book/reg-xi/rule-1194.pdf?sfvrsn=4; and South Coast Air Quality Management District, *Rule 1196 – Clean On-Road Heavy-Duty Public Fleet Vehicles*, amended June 6, 2008. Available: http://www.aqmd.gov/docs/default-source/Regulations/Fleet-Rules/r1196.pdf?sfvrsn=2.

82 Ruffner, J.A., Gale Research Company, *Climates of the States: National Oceanic and Atmospheric Administration Narrative Summaries, Table, and Maps for Each State with Overview of State Climatologist Programs*, Third Edition, Volume 1: Alabama – New Mexico, 1985, pp. 83-93.

83 Western Regional Climate Center, Los Angeles International Airport (KLAX), *CA Climatological Summary*, Period of Record: Jul 1996 to Dec 2008.

4.1.1.3.2.2 Existing Ambient Air Quality

In an effort to monitor the various concentrations of air pollutants throughout the South Coast Air Basin, the SCAQMD divided the region into 38 Source Receptor Areas in which monitoring stations operate. The monitoring station that is most representative of existing air quality conditions in the Project area is the Southwest Coastal Los Angeles Monitoring Station located at 7201 W. Westchester Parkway (referred to as the LAX Hastings site), less than 0.5-mile from Runway 6L-24R (northernmost LAX runway). Criteria pollutants monitored at this station include O_3, CO, SO_2, NO_2, and PM_{10}. The nearest representative monitoring station that monitors $PM_{2.5}$ is the South Coastal Los Angeles County 1 Station, which is located 3648 N. Long Beach Boulevard (Long Beach). The most recent data available from the SCAQMD for these monitoring stations at the time of the Draft EIR preparation encompassed the years 2014 to 2018, as shown in **Table 4.1.1-3**.

Table 4.1.1-3
Ambient Air Quality Data

Pollutant[a, b]	2014	2015	2016	2017	2018
Ozone (O_3)					
Max. Concentration 1-hr period, ppm	0.114	0.096	0.087	0.086	0.074
Days over State Standard (0.09 ppm)[a, d]	1	1	0	0	0
Federal Design Value 8-hr period, ppm	0.064	0.068	0.070	0.066	0.063
Max. California Concentration 8-hr period, ppm	0.080	0.077	0.080	0.070	0.065
Days over State Standard (0.07 ppm)[d]	6	3	3	0	0
Carbon Monoxide (CO)					
Max. Concentration 1-hr period, ppm[e]	3.0	1.7	1.6	2.1	1.8
Max. Concentration 8-hr period, ppm[e]	1.9	1.4	1.3	1.6	1.5
Nitrogen Dioxide (NO_2)					
Max. Concentration 1-hr period, ppm[e]	0.087	0.087	0.082	0.072	0.060
Annual Arithmetic Mean (AAM), ppm[e]	0.012	0.011	0.010	0.009	0.009
Sulfur Dioxide (SO_2)					
Max. Concentration 1-hr period, ppm[e]	0.015	0.015	0.010	0.009	0.012
99th Percentile Concentration 1-hr period, ppm[e]	0.009	0.007	0.006	0.007	0.005
Max. Concentration 24-hr period, ppm[e]	0.003	0.003	0.004	0.002	0.002
Respirable Particulate Matter (PM_{10})[c]					
Max. Federal Concentration 24-hr period, µg/m[c, e]	46.0	42.0	43.0	46.0	45.0
Max. California Concentration 24-hr period, µg/m[c, e]	45.0	42.0	43.9	46.5	45.1
Days over State Standard (50 µg/m^3)[d]	0	0	0	0	0
Annual California Concentration, µg/m^3	22.0	21.2	21.6	19.8	20.5
Exceed State Standard? (20 µg/m^3)	**Yes**	**Yes**	**Yes**	No	**Yes**
Fine Particulate Matter ($PM_{2.5}$)[c]					
Max. Concentration in 24-hr period, µg/m^3	38.3	54.6	29.3	55.3	79.6
98th Percentile Concentration in 24-hr period, µg/m^3	35	32	24	32	32
24-Hour NAAQS Design Value, µg/m^3	30	32	31	29	30
No. of Samples Above Federal 24-Hour Standard (35 µg/m^3)[a, d]	2	3	0	4	6
Annual Federal Concentration, µg/m^3	12.1	10.7	10.3	10.9	11.3
Annual NAAQS Design Value, µg/m^3	--[f]	--[f]	--[f]	10.7	10.9
Exceed State Standard? (12 µg/m^3)	Yes	No	No	No	No

Table 4.1.1-3
Ambient Air Quality Data

Pollutant[a, b]	2014	2015	2016	2017	2018

Sources: South Coast Air Quality Management District, *Historical Data by Year*. Available: https://www.aqmd.gov/home/air-quality/historical-air-quality-data/historical-data-by-year, accessed October 23, 2019. California Air Resources Board, *iADAM: Air Quality Data Statistics*. Available: https://www.arb.ca.gov/adam, accessed October 23, 2019. U.S. Environmental Protection Agency, *Air Quality Statistics Report*. Available: https://www.epa.gov/outdoor-air-quality-data/monitor-values-report, accessed October 23, 2019.

Notes:

[a] An exceedance is not necessarily a violation. A violation occurs when exceedances of the NAAQS and CAAQS standards occur at a greater frequency than allowed as defined in 40 CFR 50 for NAAQS and 17 CCR 70200 for CAAQS.

[b] Statistics may include data that are related to an exceptional event.

[c] Exceptional events have been excluded.

[d] Days over the standard are only shown for non-attainment pollutants.

[e] The measured concentrations meet the standards listed in Table 4.1.1-1.

[f] Insufficient data available to determine the design value.

Key:

AAM = Annual arithmetic mean; µg/m^3 = micrograms per cubic meter; ppm = parts per million (by volume).

- **Ozone** – The maximum 1-hour O_3 concentration reported during the 2014 to 2018 period was 0.114 parts per million (ppm), recorded in 2014. The maximum 1-hour O_3 concentration has declined each year since then. During the reporting period, the California 1-hour standard was exceeded twice. The maximum 8-hour O_3 concentration was 0.080 ppm recorded in 2014 and 2016. The California standard was exceeded between three and six days annually from 2014 to 2016, but was not exceeded in 2017 and 2018. The 8-hour NAAQS was not exceeded between 2014 and 2018.
- **Carbon Monoxide** – The highest 1-hour CO concentration reported was 3.0 ppm, recorded in 2014. The maximum 8-hour CO concentration reported was 1.9 ppm, also recorded in 2014. The standards were not exceeded during the five-year period.
- **Nitrogen Dioxide** – The highest 1-hour NO_2 concentration recorded was 0.087 ppm in both 2014 and 2015. The highest recorded NO_2 annual arithmetic mean was 0.012 ppm recorded in 2014. The standards were not exceeded during the five-year period.
- **Sulfur Dioxide** – The highest 1-hour SO_2 concentration recorded was 0.015 ppm in both 2014 and 2015. The maximum 99th percentile 1-hour concentration was 0.009 ppm, recorded in 2014. The highest recorded SO_2 24-hour concentration was 0.004 ppm recorded in 2016. The standards were not exceeded during the five-year period.
- **Respirable Particulate Matter (PM_{10})** – The highest reported 24-hour PM_{10} concentration was 46 µg/m^3 recorded in 2014 and 2017. During the period 2014 to 2018, the 24-hour CAAQS and NAAQS were not exceeded. The maximum annual California concentration recorded was 22.0 µg/m^3 in 2014.
- **Fine Particulate Matter ($PM_{2.5}$)** – The maximum 24-hour $PM_{2.5}$ concentration recorded was 55.3 µg/m^3 in 2017. The highest annual concentration value of 11.4 µg/m^3 was recorded in 2014. Between 2014 and 2018, annual $PM_{2.5}$ NAAQS was not exceeded. Between 0 and four 24-hour sample values exceeded the 24-Hour $PM_{2.5}$ NAAQS.

4.1.1.4 Thresholds of Significance

The proposed Project would result in a significant impact related to air quality if it would:

Threshold 4.1.1-1 Result in estimated incremental increases in construction-related emissions that are greater than the daily mass emission thresholds established by SCAQMD. SCAQMD's construction emission thresholds are summarized in **Table 4.1.1-4**.

Threshold 4.1.1-2 Result in estimated incremental increases in operations-related emissions that are greater than the daily mass emission thresholds established by SCAQMD. SCAQMD's operational emission thresholds are summarized in Table 4.1.1-4.

Threshold 4.1.1-3 Result in estimated incremental ambient concentrations due to construction-related emissions that would be greater than the concentration thresholds established by SCAQMD. SCAQMD's construction concentration thresholds are summarized in **Table 4.1.1-5.**

Threshold 4.1.1-4 Result in estimated incremental ambient concentrations due to operations-related emissions that would be greater than the concentration thresholds established by SCAQMD. SCAQMD's operational concentration thresholds are summarized in Table 4.1.1-5.

Table 4.1.1-4
SCAQMD CEQA Significance Thresholds for Air Pollutant Emissions in the South Coast Air Basin

Pollutant	Mass Emission Thresholds in Pounds per Day (lbs/day)	
	Construction	Operations
Carbon Monoxide (CO)	550	550
Volatile Organic Compounds (VOC)	75	55
Nitrogen Oxides (NO_X)	100	55
Sulfur Oxides (SO_X)	150	150
Respirable Particulate Matter (PM_{10})	150	150
Fine Particulate Matter ($PM_{2.5}$)	55	55

Source: South Coast Air Quality Management District, *South Coast AQMD Air Quality Significance Thresholds*, April 2019. Available: http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf?sfvrsn=2.

Table 4.1.1-5
SCAQMD CEQA Significance Thresholds for Air Pollutant Concentrations in the South Coast Air Basin

Pollutant	Averaging Period	Project-Related Concentration Thresholds		
		Construction	Operations	Project Only or Total
CO	1-Hour (State)[a]	20 ppm (23,000 µg/m³)	20 ppm (23,000 µg/m³)	Total incl. Background
	8-Hour (Both)	9.0 ppm (10,000 µg/m³)	9.0 ppm (10,000 µg/m³)	Total incl. Background
NO_2	1-Hour (State)	0.18 ppm (339 µg/m³)	0.18 ppm (339 µg/m³)	Total incl. Background
	Annual (State)[a]	0.03 ppm (57 µg/m³)	0.03 ppm (57 µg/m³)	Total incl. Background
SO_2	1-Hour (State)[b, c]	0.25 ppm (655 µg/m³)	0.25 ppm (655 µg/m³)	Total incl. Background
	1-Hour (Federal)[b]	0.075 ppm (196 µg/m³)	0.075 ppm (196 µg/m³)	Total incl. Background
	24-Hour (State)	0.04 ppm (105 µg/m³)	0.04 ppm (105 µg/m³)	Total incl. Background
PM_{10}	24-Hour[d]	10.4 µg/m³	2.5 µg/m³	Project Only
	Annual[d]	1.0 µg/m³	1.0 µg/m³	Project Only
$PM_{2.5}$	24-Hour[d]	10.4 µg/m³	2.5 µg/m³	Project Only

Source: South Coast Air Quality Management District, *South Coast AQMD Air Quality Significance Thresholds*, April 2019. Available: http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf?sfvrsn=2.

Notes:

[a] The concentration threshold for 1-hour CO and annual NO_2 is the CAAQS, which is more stringent than the NAAQS for these pollutants and averaging periods.

[b] To evaluate impacts of the proposed Project to ambient 1-hour SO_2 thresholds, the analysis includes both the State standard and the Federal standard. The methods to determine attainment of each standard, as well as the value of the standards are different; therefore, both were analyzed.

[c] The 3-hour secondary NAAQS for SO_2 is 0.5 ppm (1,300 µg/m³), double the value of the 1-hour SO_2 CAAQS; therefore, the significance determination for the 1-hour SO_2 CAAQS represents the significance determination of the 3-hour SO_2 secondary NAAQS in this analysis.

[d] The concentration thresholds for PM_{10} and $PM_{2.5}$ have been developed by SCAQMD for construction or operational impacts associated only with the proposed Project.

Key:
µg/m³ = micrograms per cubic meter; CO = carbon monoxide; lbs/day = pounds per day; NO_X = nitrogen oxides; PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter; SO_X = sulfur oxides; VOC = volatile organic compounds.

4.1.1.4.1 Regional Emissions Thresholds

The SCAQMD has developed CEQA construction and operations thresholds of significance for air pollutant emissions from projects proposed in the South Coast Air Basin. Note that SCAQMD's primary role is focused on attaining and maintaining ambient air quality in the region that complies with federal and state ambient air quality standards through the implementation of rules, regulations, and policies that control air pollutant emissions. SCAQMD's development and use of the project-level CEQA emission thresholds was based on the plans and regulatory thresholds required to achieve the ambient air quality standards. These are considered to be regional emission thresholds because ambient air quality is the product of all air pollutant emissions in the air basin. Therefore, the SCAQMD's regional emission thresholds are set at levels that would attain the ambient air quality standards and, thus, protect human health.

Because of the cumulative nature of air quality impacts, these thresholds were also developed to meet the need to address cumulative impacts. For example, few sources emit ozone directly, as noted in Section 4.1.1.1.1 above. The relatively high ozone levels in the South Coast Air Basin are the result of numerous facilities and millions of sources, including the millions of cars and trucks, that operate daily in the region emitting NO_X and VOC which react in the presence of sunlight to form ozone. Therefore, the

same thresholds are employed in evaluating both the significance of project-level impacts as well as a project's contribution to a cumulative impact.

SCAQMD's construction and operation emissions thresholds are summarized in Table 4.1.1-4. These thresholds serve to address a project's consistency with applicable SCAQMD plans (the Final 2016 AQMP), impacts to ambient air quality standards, and contributions to cumulative impacts, including cumulatively considerable net increases to any criteria pollutant for which the air basin is in nonattainment, as specified in Appendix G of the State CEQA Guidelines.

SCAQMD's construction and operation emissions thresholds are summarized in Table 4.1.1-4. These thresholds serve to address a project's consistency with applicable SCAQMD plans (the Final 2016 AQMP), impacts to ambient air quality standards, and contributions to cumulative impacts, including cumulatively considerable net increases to any criteria pollutant for which the air basin is in nonattainment, as specified in Appendix G of the State CEQA Guidelines.

Construction activity and impacts are temporary; therefore, SCAQMD has established significance emission thresholds specifically for construction. In accordance with the SCAQMD *CEQA Air Quality Handbook* and supplemental guidance documentation,[84] and as reflected in Threshold 4.1.1-1 above, a significant air quality impact would occur if the estimated incremental increase in construction-related emissions attributable to the proposed Project would be greater than the daily mass emission thresholds presented in Table 4.1.1-4.

SCAQMD has also established significance emission thresholds for operations. The thresholds are based in part on CAA Section 182(e) and Title V operating source permit program major source thresholds, which vary depending on the attainment status of the region for a given pollutant (see Table 4.1.1-2 for the South Coast Air Basin attainment status for each criteria pollutant). Emissions below these levels are generally not expected to modify regional ambient air quality levels. For example, the federal major source threshold for NO_X and VOC in an extreme nonattainment area for ozone is 10 tons per year, which SCAQMD has converted to a daily significance threshold of 55 pounds per day. The South Coast Air Basin is classified as attainment for CO, with a major source threshold of 100 tons per year, converted to 550 pounds per day. Because a portion of ambient $PM_{2.5}$ concentrations are derived for secondary formation of $PM_{2.5}$ from precursor pollutants and can remain suspended in air longer than larger particulate matter, the SCAQMD significance threshold is set at 55 pounds per day (10 tons per year),[85] well below the federal Title V major source threshold of 70 tons per year.

Therefore, in accordance with the SCAQMD CEQA Air Quality Handbook and supplemental guidance documentation,[86] and reflected in Threshold 4.1.1-2 above, a significant air quality impact would occur if the estimated incremental increase in operations-related emissions attributable to the proposed Project would be greater than the daily mass emission thresholds for operations presented in Table 4.1.1-4.

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84 South Coast Air Quality Management District, *CEQA Air Quality Handbook*, April 1993; South Coast Air Quality Management District, *Air Quality Analysis Handbook Supplemental Information*, June 2020. Available: http://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook.

85 South Coast Air Quality Management District, *Final - Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds*, October 2006. Available: http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/particulate-matter-(pm)-2.5-significance-thresholds-and-calculation-methodology/final_pm2_5methodology.pdf?sfvrsn=2.

86 South Coast Air Quality Management District, *CEQA Air Quality Handbook*, April 1993; South Coast Air Quality Management District, *Air Quality Analysis Handbook Supplemental Information*, June 2020. Available: http://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook.

4.1.1.4.1.1 Scenarios Used to Determine Significance for Emissions

Construction

The analysis of construction emissions impacts includes both emissions directly associated with Project-related construction activity and indirect emissions associated with additional aircraft delay on the ground due to temporary construction-related runway closures in 2023 and 2024. The indirect emissions associated with the runway closures were added to the Project-related direct construction emissions to determine total peak emissions for those years. Construction-related emissions attributable to the proposed Project were compared to the significance thresholds for construction to determine the Project's impacts.

Operations

In order to determine the Project-related operations impacts associated with air pollutant emissions, the total emissions associated with the proposed Project that would occur in 2028 (2028 With Project) were compared to the baseline emissions in 2018 (2018 Baseline). The difference between these two conditions was used to determine the significance of Project-related emissions in 2028. (see Section 4.1.1.1, *Introduction*, for an explanation of baseline conditions used for the air quality analysis).[87]

CEQA requires that normally, a proposed project be compared to existing conditions (in this case 2018 baseline conditions) for the purpose of making a significance determination. For the proposed Project, the Project-related incremental emissions (i.e., the emissions of the proposed Project in 2028 compared to 2018 baseline conditions) would be influenced by factors that are not attributable to the Project itself. Specifically, Project-related incremental emissions contain future emissions from background growth in passengers and aircraft operations that are projected to occur with or without the Project. The incremental emissions also account for lower emission factors for motor vehicles from improved engine technology. In order to remove the influence of background growth and the differences in motor vehicle emission factors between 2018 and 2028, a second comparison is provided of emissions from the proposed Project in 2028 (2028 With Project) and emissions from the Future Without Project scenario in 2028 (2028 Without Project). The difference between these two scenarios highlights the air pollutant emissions impacts of the proposed Project compared to future emissions that are estimated to occur without the Project. This comparison is made for informational purposes only; the significance of the Project impacts is not based on this comparison.

4.1.1.4.2 Local Concentration Thresholds

The SCAQMD has developed construction and operations thresholds of significance for air pollutant concentration impacts from projects proposed in the South Coast Air Basin. These are referred to as local concentration thresholds and are summarized in Table 4.1.1-5. In accordance with the SCAQMD *CEQA Air Quality Handbook*, and as reflected in Thresholds 4.1.1-3 and 4.1.1-4 above, a significant air quality impact would occur if the estimated incremental ambient concentrations due to construction-related or operations-related emissions would be greater than the concentration thresholds presented in Table 4.1.1-5. The SCAQMD's recommended thresholds for the evaluation of local air quality impacts are based on the difference between the maximum monitored ambient pollutant concentrations in the area and the CAAQS or NAAQS. Therefore, the thresholds depend upon the concentrations of pollutants monitored locally with respect to a project site. For pollutants that already exceed the CAAQS or NAAQS (e.g., PM_{10} and $PM_{2.5}$), the thresholds are based on SCAQMD Rule 403 for construction and Rule 1303,

[87] CDM Smith, *Los Angeles International Airport – Airfield and Terminal Modernization Project, Final CEQA Protocol for Conducting an Air Quality Impact Analysis of Criteria Air Pollutants*, June 4, 2020. This protocol is included as **Appendix C.8** of this EIR.

Table A-2, for operations, as described in SCAQMD's *Final Localized Significance Threshold Methodology*.[88] Because the concentration thresholds are designed to attain or maintain the CAAQS and NAAQS, they are consequently set at levels that would protect human health.

The methodology requires that the increase in ambient air pollutant concentrations, determined using a computer-based air quality dispersion model, be compared to local concentration significance thresholds for CO, NO_2, SO_2, PM_{10}, and $PM_{2.5}$. The methodology for CO, NO_2 and SO_2 requires that the project-related contributions for these pollutants be added to existing background concentrations (shown in Table 4.1.1-3) and the summation be compared to the appropriate threshold. The significance thresholds for PM_{10} and $PM_{2.5}$ represent the allowable increase in concentrations above background levels in the vicinity of the Project site that would not cause or contribute to an exceedance of the relevant ambient air quality standards. The thresholds are intended to constrain emissions to aid in the progress toward attainment and maintenance of the ambient air quality standards.[89] Because the PM_{10} and $PM_{2.5}$ thresholds are relative to the Project incremental impact, Project-related concentrations were not added to background concentrations before comparing to these thresholds.

For the purposes of this analysis, the local construction and operations emissions resulting from development of the proposed Project are assessed with respect to the thresholds in Table 4.1.1-5 using dispersion modeling (i.e., AERMOD). Details regarding the thresholds associated with each pollutant are provided below.

- **CO** - The significance thresholds for CO are the 1-hour and 8-hour CAAQS of 23 milligrams per cubic meter (mg/m^3) and 10 mg/m^3, respectively. With respect to CO, the CAAQS are at least as stringent as the NAAQS; therefore, compliance with the CAAQS indicates compliance with the NAAQS. Because the thresholds are the ambient air quality standards, the Project incremental concentrations were added to background concentrations before the comparison to the standard was made.
- **NO_2** - The local significance thresholds for 1-hour NO_2 concentrations is the 1-hour NO_2 CAAQS of 339 $\mu g/m^3$. The significance threshold for annual NO_2 concentrations is the annual NO_2 CAAQS of 57 $\mu g/m^3$, which is more stringent than the annual NO_2 NAAQS; therefore, compliance with the CAAQS also indicates compliance with the NAAQS. Because the thresholds are the ambient air quality standards, the Project incremental concentrations were added to background concentrations before the comparison to the standard was made.
- **SO_2** - The significance thresholds for 1-hour SO_2 concentrations are the 1-hour SO_2 CAAQS of 655 $\mu g/m^3$, and the 1-hour SO_2 NAAQS of 196 $\mu g/m^3$. The 1-hour SO_2 NAAQS is determined from the 3-year average of the 99th percentile of the daily maximum 1-hour average and, thus, requires a different approach to determine background and Project-related concentrations than the 1-hour SO_2 CAAQS. The significance threshold for daily SO_2 concentrations is the 24-hour SO_2 CAAQS (105 $\mu g/m^3$) because the previous 24-hour SO_2 NAAQS has been revoked. The 3-hour secondary NAAQS for SO_2 is 0.5 ppm (1,300 µg/m3), which is double the value of the 1-hour SO_2 CAAQS; therefore, the significance determination for the 1-hour SO_2 CAAQS represents the significance determination of the 3-hour SO_2 secondary NAAQS in this analysis. Because the thresholds are the ambient air quality standards, the Project incremental concentrations were added to background concentrations before the comparison to the standard was made.

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88 South Coast Air Quality Management District, *Final Localized Significance Threshold Methodology*, Revised July 2008. Available: http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/final-lst-methodology-document.pdf?sfvrsn=2.

89 South Coast Air Quality Management District, *Final - Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds*, October 2006. Available: http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/particulate-matter-(pm)-2.5-significance-thresholds-and-calculation-methodology/final_pm2_5methodology.pdf?sfvrsn=2.

- **PM_{10} and $PM_{2.5}$** - The significance thresholds for PM_{10} and $PM_{2.5}$ concentrations are the CEQA thresholds developed by SCAQMD. For both PM_{10} and $PM_{2.5}$, SCAQMD developed separate daily thresholds for construction (10.4 µg/m^3) and operations (2.5 µg/m^3). SCAQMD also developed an annual threshold for PM_{10} (1.0 µg/m^3) applicable to both construction and operations. These PM_{10} and $PM_{2.5}$ thresholds are relative to the Project incremental impact; thus, as noted above, Project-related concentrations were not added to background concentrations before comparing to these thresholds.

4.1.1.4.2.1 Scenarios Used to Determine Significance for Local Concentrations

Construction

Concentrations associated with on-airport emissions attributable to proposed Project construction were compared to the significance thresholds for construction. For reasons described above, Project-related construction concentrations of PM_{10} and $PM_{2.5}$ were compared directly to the construction concentration thresholds in Table 4.1.1-5, whereas Project-related construction concentrations of CO, NO_2, and SO_2 were added to appropriate background concentrations before comparing to the construction concentration thresholds in Table 4.1.1-5.

Operations

The dispersion analysis for 2028 modeled concentrations associated with total airport operations in that year. In order to evaluate impacts associated with the proposed Project in isolation (i.e., without including impacts associated with existing airport operations), concentrations associated with the 2018 baseline conditions were subtracted from future 2028 With Project concentrations. In order to determine total concentrations in the air with implementation of the proposed Project, the resulting Project-related incremental concentrations for CO, NO_2, and SO_2 were added to ambient concentrations shown in Table 4.1.1-3. Then, total concentrations (i.e., ambient concentrations plus Project-related concentrations) were compared to the operations concentration thresholds in Table 4.1.1-5 to determine if the proposed Project would exceed the thresholds. For reasons described above regarding thresholds specific to each pollutant, operations-related concentrations of PM_{10} and $PM_{2.5}$ were compared directly to the operations concentration thresholds in Table 4.1.1-5. The level of significance for the proposed Project's impacts in 2028 is based on these comparisons.

As with the analysis of emissions, described above, in order to remove the influence of background growth and the differences in motor vehicle emission factors between 2018 and 2028, a second comparison is provided of concentrations from the proposed Project in 2028 and concentrations from the Future Without Project scenario in 2028. The difference between these two scenarios highlights the air pollutant concentration impacts of the proposed Project compared to future concentrations that are projected to occur without the Project. This comparison is made for informational purposes only (i.e., the significance of the Project impacts is not based on this comparison).

4.1.1.4.2.2 Determination of Background Concentrations

The background concentrations for criteria pollutants were determined using historical pollutant concentrations available from CARB.[90] For the purposes of determining the background concentrations of CO, NO_2, and SO_2 for comparison to the CAAQS, peak values were selected from the most recent three years of ambient air pollutant concentrations, shown in Table 4.1.1-3 above. For 1-hour SO_2 NAAQS, the background concentrations were determined from the maximum consecutive three-year average of the 99th percentile (SO_2) peak daily 1-hour values from the most recent five years of data. As noted above, the concentration thresholds for PM_{10} and $PM_{2.5}$ developed by SCAQMD are for project increments only; therefore, no background concentrations were estimated for these two pollutants.

Finally, when modeling source emissions for comparison to the 1-hour NO_2 CAAQS, a seasonal hour-of-day NO_2 background file was developed following guidance developed by CAPCOA.[91] The most recent three years of monitored 1-hour NO_2 data available (2016-2018) from the LAX Hastings site were obtained from the USEPA.[92] This approach was used to address the hourly impacts that occur in the late evening and early morning hours.

4.1.1.5 Project Impacts

4.1.1.5.1 Impact 4.1.1-1

Summary Conclusion for Impact 4.1.1-1: Construction of the proposed Project would result in estimated incremental increases in construction-related emissions that are greater than the daily mass emission thresholds established by SCAQMD. This would be a *significant impact* for construction. Even with mitigation, this would remain a *significant and unavoidable impact* for construction.

4.1.1.5.1.1 Construction Impacts

As noted in Section 4.1.1.4.1, the analysis of construction impacts includes both direct emissions associated with Project-related construction activity and indirect emissions associated with the increased taxi and delay times that would occur from temporary construction-related runway closures in 2023 and 2024 (see **Appendix C**). The tables below present direct emissions, indirect emissions, and total emissions. The determination of significance was based on total emissions.

Table 4.1.1-6 presents the peak daily criteria pollutant emissions directly associated with construction activities for each year of construction (i.e., 2021 to 2028). The year-to-year variations between the different years are largely attributable to the differences in Project development timeframes and construction needs.

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90 California Air Resources Board, *iADAM: Air Quality Data Statistics – Top 4 Summary*. Available: http://www.arb.ca.gov/adam/topfour/topfour1.php.

91 California Air Pollution Control Officers Association, *Modeling Compliance of the Federal 1-Hour NO_2 NAAQS*, October 27, 2011, p. 14. Available: https://www.valleyair.org/busind/pto/Tox_Resources/CAPCOANO2GuidanceDocument10-27-11.pdf.

92 U.S. Environmental Protection Agency, *Air Quality System (AQS) – AirData – Download Data Files*. Available: https://aqs.epa.gov/aqsweb/airdata/download_files.html#Raw.

Table 4.1.1-6
Peak Daily Criteria Pollutant Emissions from Project Construction Activities

Year	CO (lbs/day)	VOC (lbs/day)	NO_X (lbs/day)	PM_{10} (lbs/day)	$PM_{2.5}$ (lbs/day)	SO_X (lbs/day)
2021	121	11	41	7	3	<1
2022	309	26	102	15	6	1
2023	479	53	157	25	10	2
2024	483	58	160	23	10	2
2025	302	67	101	11	6	1
2026	93	21	30	6	2	<1
2027	96	8	31	3	2	<1
2028	1	<1	<1	<1	<1	<1
Peak Daily Emissions	483	67	160	25	10	2
Threshold	550	75	100	150	55	150
Exceeds Threshold?	**No**	**No**	**Yes**	**No**	**No**	**No**

Source: **Appendix C** of this EIR.

Key:
CO = carbon monoxide; lbs/day = pounds per day; NO_X = nitrogen oxides; PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter; SO_X = sulfur oxides; VOC = volatile organic compounds.

As described in Chapter 2, *Description of the Proposed Project*, construction of the airfield improvements would require the temporary closures of Runways 6L-24R and 6R-24L for approximately 4.5 months each, to safely tie-in the new runway exits to these runways. Only one of these runways would be closed in a given year. During these times, aircraft operations at LAX would occur on three runways (i.e., one runway in the north airfield and two runways in the south airfield). The temporary closure of each runway would increase the distances that aircraft would taxi, as some aircraft activity that would normally occur on the closed runway would be shifted to either the other north airfield runway, or to one of the south airfield runways (Runways 7L-25R or 7R-25L). Moreover, three-runway operations would be less efficient, resulting in a temporary increase in aircraft taxi-idle times and corresponding air pollutant emissions.

Two SIMMOD analyses of the airport, based on Design Day Flight Schedules (see **Appendix B.2**, *Operational Analyses Report*, for a description of Design Day Flight Schedules), were conducted to develop an estimate of the increased taxi idle times due to the closure of Runway 6R-24L (i.e., the inboard runway). (These analyses were conducted assuming that Runway 6R-24L would be closed in 2023. It was later determined that Runway 6R-24L would be closed in 2024. The implications of this change are discussed below.) The closure of Runway 6R-24L was selected for the analysis since its closure would require any aircraft using the north airfield to taxi in or out from Runway 6L-24R (i.e., the outboard runway), and for all heavy aircraft (e.g., Boeing 747, Airbus A380, etc.) departing from LAX north airfield terminals to taxi down to the south airfield because Runway 6L-24R is not long enough to accommodate the heavy aircraft departures during the closure of Runway 6R-24L. One SIMMOD run was used to calculate taxi and delay times with Runway 6R-24L closed in 2023, and the other run was used to calculate taxi and delay times with all runways opened (i.e., normal operations) in 2023. The incremental taxi-idle times between the two runs represented the additional delay during proposed Project construction that would occur if Runway 6R-24L were closed in 2023.

Subsequent to completion of the SIMMOD analyses, the proposed construction schedule was modified, with the closure of Runway 6R-24L occurring in 2024 instead of 2023.[93] This later year was forecasted to have approximately 1 percent more total aircraft operations than 2023, which would increase the incremental taxi-idle times relative to the closure in 2023. This increase is two-fold: (i) the taxi-idle times per aircraft operation would increase due to more operations occurring each day, which would increase the delay times per operation; and (ii) the total number of delayed operations would also increase. The increase in taxi-idle times per operation was estimated to be approximately 2.9 percent, which was combined with the increase in total operations (1 percent) to indicate a total increase in daily taxi-idle times of 3.9 percent due to the shutdown of Runway 6R-24L in 2024 compared to the shutdown in 2023. This 3.9 percent increase was added to the incremental results of the SIMMOD runs for 2023 to estimate incremental taxi-idle times for the shutdown of Runway 6R-24L in 2024.

As noted above, there would be a similar temporary closure of Runway 6L-24R in 2023 of approximately the same duration (i.e., 4.5 months). This closure would shift some aircraft activity from Runway 6L-24R to Runway 6R-24L. Because Runway 6R-24L is closer to the terminals, the taxi distances would decrease as compared to normal operations. However, as noted above, three-runway operations would be less efficient, which would increase aircraft taxi-idle times. Closure of Runway 6L-24R in 2023 would result in a temporary, incremental increase in emissions as compared to conditions without the runway closure, although the increase would be lower than that for the closure of Runway 6R-24L. Therefore, the increased emissions from the SIMMOD run associated with the closure of Runway 6R-24L in 2023 is a conservative (high) estimate of the increased emissions associated with the closure of Runway 6L-24R in 2023.

Table 4.1.1-7 provides a comparison of 2023 and 2024 air pollutant emissions with the temporary runway closures to 2023 and 2024 air pollutant emissions without the closures, as well as the incremental differences between the two conditions for each year.[94] These incremental differences represent the Project-related indirect construction emissions associated with the temporary runway closures.

[93] Under the currently proposed construction schedule, Runway 6L-24R would be temporarily closed in 2023 instead of 2024.

[94] As described in the Analytical Framework discussion in the Introduction to Chapter 4, the baseline conditions used in evaluating impacts associated with the temporary closure of each north runway during construction of the proposed airfield improvements reflect the activity levels at the time of those closures (i.e., 2023 and 2024), which accounts for five to six interim years of growth in aircraft operations projected to occur at LAX, which would otherwise not be accounted for if 2018 was assumed as the baseline year. In these instances, using 2018 operations activity levels as the baseline condition would be misleading and without informative value since it would not provide an accurate representation of the temporary impacts that would occur due to the runway closures. This approach is appropriate because LAX is a dynamic facility, and conditions are generally not static over time. In particular, the level of aircraft operations that exist in 2023 and 2024 will differ from those conditions that existed in 2018. It is, therefore, appropriate to adjust the baseline to reflect these anticipated conditions as of 2023 and 2024. This approach is conservative because the number of aircraft operations is expected to increase between 2018 and 2023/2024. As a result, the use of a 2023/2024 baseline involves more aircraft operations and, therefore, greater impacts than would occur if a 2018 baseline were used for this purpose.

Table 4.1.1-7
Aircraft Taxi/Idle Criteria Pollutant Emissions from Temporary Runway Closures

Pollutant	2023 – Closure of Runway 6L-24R (lbs/day)			2024 – Closure of Runway 6R-24L (lbs/day)		
	Without Closure	With Closure	Incremental Difference[a]	Without Closure	With Closure	Incremental Difference[a]
CO	25,213	28,977	3,764	26,803	30,715	3,911
VOC	2,891	3,206	315	3,037	3,364	327
NO_X	26,082	26,703	621	27,291	27,936	645
PM_{10}	147	156	10	257	267	10
$PM_{2.5}$	147	156	10	257	267	10
SO_X	2,187	2,351	165	2,343	2,514	171

Source: **Appendix C** of this EIR.

Note:
[a] Numbers may not add due to rounding.

Key:
CO = carbon monoxide; lbs/day = pounds per day; VOC = volatile organic compounds; NO_X = nitrogen oxides; PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter; SO_X = sulfur oxides; VOC = volatile organic compounds.

Total emissions on the peak day for each pollutant, including both direct emissions from Project-related construction activities and incremental indirect emissions from the temporary runway closure, are presented in **Table 4.1.1-8**.

Table 4.1.1-8
Total Direct and Indirect Construction-Related Criteria Pollutant Emissions

Year	CO (lbs/day)	VOC (lbs/day)	NO_X (lbs/day)	PM_{10} (lbs/day)	$PM_{2.5}$ (lbs/day)	SO_X lbs/day)
Peak Daily Direct Emissions	483	67	160	25	10	2
Peak Daily Incremental Indirect Emissions[a]	3,911	327	645	10	10	171
Total Peak Daily Emissions[b,c]	4,394	385	805	34	20	173
Threshold	550	75	100	150	55	150
Significant?	**Yes**	**Yes**	**Yes**	**No**	**No**	**Yes**

Source: **Appendix C** of this EIR.

Notes:
[a] Incremental indirect emissions are associated with temporary runway closures.
[b] Numbers may not add due to Peak Daily Direct and Peak Daily Indirect emissions occurring in different years.
[c] Numbers may not add due to rounding.

Key:
CO = carbon monoxide; lbs/day = pounds per day; NO_X = nitrogen oxides; PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter; SO_X = sulfur oxides; VOC = volatile organic compounds.

As shown in Table 4.1.1-6, peak daily direct construction emissions of NO_x would exceed the SCAQMD construction emission threshold; peak daily direct emissions of all other pollutants would not exceed the thresholds. However, as shown in Table 4.1.1-8, when taking into consideration both the direct emissions from construction activities and the indirect incremental emissions associated with the temporary runway closure, peak daily emission of CO, VOC, NO_X, and SO_X would exceed the SCAQMD construction emission thresholds; only the peak daily construction emissions of PM_{10} and $PM_{2.5}$ would not exceed the SCAQMD construction regional daily emission thresholds. The exceedances of CO, VOC, NO_X, and SO_X SCAQMD construction emission thresholds mean that the proposed Project's construction emissions would

contribute to localized adverse health impacts of these pollutants described in Section 4.1.1.1. Note that the indirect emissions due to runway closures would only occur for two separate four-and-a-half-month periods within the entire construction schedule. For the remaining construction period, more than six years, the only significant impact would be from NO_X emissions. Nevertheless, the proposed Project's construction emissions of CO, VOC, NO_X, and SO_X would result in a ***significant impact*** related to air quality during the two runway closure periods.

Note that the ambient air quality standards set by CARB and USEPA are health-based standards, indicating that exposure to concentrations that are less than these standards would have negligible adverse health impacts. These standards for CO, NO_2, and SO_2 are used as significance thresholds as described in Section 4.1.1.4 above. The construction-related impacts to ambient concentrations of CO, NO_2, and SO_2, as well as PM_{10} and $PM_{2.5}$, are discussed in Section 4.1.1.5.3 below. In addition, the health risk assessment associated to exposure of toxic organic (including those that are also considered VOC) and particulate matter is provided in Section 4.1.2, *Human Health Risk*. Finally, a brief comparison of the proposed Project ozone precursor (NO_X and VOC) emissions relative to two recent studies of secondary ozone impacts to human health follows.

Photochemical Modeling of Secondary Air Pollutants - Construction

As discussed in Section 4.1.1.2.6, a 2018 decision by the Supreme Court of California determined that CEQA requires an EIR to contain an analysis that correlates the specific human health effects that would occur as a result of a project's significant air pollutant emissions. As further discussed in that section, two recent Draft EIRs completed photochemical modeling to evaluate changes in health end-point incidences related to significant emissions increases of O_3 and $PM_{2.5}$ precursors. The following analysis compares the results of these Draft EIRs to projected impacts from the proposed Project in order to assess health-related impacts of the proposed Project's increases in of O_3 precursors.

Norman Y. Mineta San Jose International Airport Master Plan Amendment

A comparison of the project-related emissions associated with the SJC Master Plan Amendment and the proposed Project is provided in **Table 4.1.1-9.** As shown in the table, the emissions of the ozone precursor NO_X would be approximately 7.0 times lower under the proposed Project construction peak day than the emissions modeled for the SJC Master Plan Amendment Draft EIR, while the VOC emissions associated with construction of the proposed Project would be approximately 6.8 times higher. On a mass basis of total ozone precursors (NO_X plus VOC), the proposed Project peak day construction emissions would be more than 4.8 times lower than the emissions modeled for the SJC Master Plan Amendment Draft EIR.

Table 4.1.1-9
Photochemical Modeling Pollutant Emissions

Pollutant	Emissions (lbs/day)		
	SJC Master Plan Amendment Draft EIR	IBEC Draft EIR	Proposed Project Peak Day Construction
NO_X	5,643	99	805
VOC	57	~100	385

Sources: City of San Jose, *Draft Environmental Impact Report for Amendment to Norman Y. Mineta San Jose International Airport Master Plan,* State Clearinghouse No. 2018102020, prepared by David J. Powers & Associates, Inc., November 2019. Available: https://www.sanjoseca.gov/Home/ShowDocument?id=44618; City of Inglewood, *Inglewood Basketball and Entertainment Center Project Draft Environmental Impact Report,* State Clearinghouse No. 2018021056, prepared by ESA and Fehr & Peers, December 2019. Available: https://www.cityofinglewood.org/1036/Murphys-Bowl-Proposed-NBA-Arena; **Appendix C** of this EIR.

Key:
NO_X = nitrogen oxides; VOC = volatile organic compounds

If the proposed Project emissions were applied to the SJC site, the resulting health impacts from ozone would likely be the same as, or less than, those modeled for the SJC Master Plan Amendment Draft EIR. The resulting change in health end-point incidences would be <0.05 percent (5/100ths of one percent) for secondary ozone concentrations.

Inglewood Basketball and Entertainment Center Project Draft EIR

A comparison of the project-related emissions associated with the IBEC Project and the proposed Project peak construction day is also provided in Table 4.1.1-9. As shown in the table, the emissions of ozone precursor NO_X would be approximately 8.1 times higher under the proposed Project than the emissions modeled for the IBEC Draft EIR, while emissions of ozone precursor VOC would be approximately 3.9 times higher than those modeled for the IBEC Project. On a mass basis of total ozone precursors (NO_X plus VOC), the proposed Project peak day construction emissions would be more than 6.0 times higher than the emissions modeled for the IBEC Draft EIR.

If the proposed Project emissions were applied to the IBEC site, the resulting health impacts from ozone might be 6.0 (total ozone precursor mass emission ratio) to 8.1 (NO_X mass emission ratio) times higher than the IBEC results. Applying this gross assumption to the IBEC results indicates that the impacts to human health end-points associated with the proposed Project would be approximately 0.003 percent (3/1,000ths of one percent) for all human health end-points analyzed in the IBEC Draft EIR.

Conclusion

As noted in Section 4.1.1.2.6.2, the findings from both the SJC Master Plan Amendment Draft EIR and the IBEC Project Draft EIR human health impact assessments indicate that the changes in emissions of ozone precursors from a single project do not "move the dial" with regard to regional human health impacts. The models available to analyze regional impacts are designed to address large, regional changes in emissions, such as those due to proposed emission control regulations that affect emissions across an entire region. Given the uncertainties in emissions, dispersion modeling, and human health concentration-response functions, the conclusion reached in these two studies was that the results to human health impacts were not statistically different than zero (i.e., no change). Applying gross emission ratios between the proposed Project and each of these studies similarly indicates that the impacts to regional human health due to changes in ozone precursors associated with the proposed Project would be negligible.

4.1.1.5.1.2 Mitigation Measures

As noted above, the total of direct and indirect construction emissions would be significant for CO, VOC, NO_X, and SO_X for two four-and-a-half-month periods during runway closures required to safely tie-in the Taxiway D extension to the north airfield runways. Only peak daily NO_X emissions from direct construction activities would be significant for four years of construction, including the two with the short-term runway closure periods.

Mitigation proposed to reduce significant impacts related to air pollutant emissions during construction is provided below. The mitigation measures identified would serve to reduce both criteria air pollutants (i.e., CO, VOC, NO_X, and SO_X) and GHG emissions, and are labeled accordingly.

- **MM-AQ/GHG (ATMP)-1. Rock Crushing Operations.**

  LAWA shall require Airfield and Terminal Modernization Project contractors to conduct rock-crushing operations on-site to reuse waste rock/concrete generated during construction of the Airfield and Terminal Modernization Project to the maximum extent feasible (determined based on facility capacity and capability, project schedule, costs, and regulatory conditions). Rock-crushing operations (rock-crushing, material laydown, and stockpiling) shall be located away from residential areas in all cases.

- **MM-AQ/GHG (ATMP)-2. Use of Renewable Diesel Fuel.**

  LAWA shall require Airfield and Terminal Modernization Project contractors to use renewable diesel fuel in proposed Project construction off-road equipment and on-site, on-road trucks (i.e., on-site water trucks), as feasible based on commercial renewable fuel availability. For purposes of this measure, commercially-available renewable fuel is defined as renewable fuel that is available in the regional area at a comparable price (i.e., without a substantial premium) and not incurring substantial transportation costs (i.e., higher costs associated with having to transport it to the Project site over substantially longer distances from the supplier[s] of renewable diesel fuel).

In addition to the measures above, the following mitigation measure would apply to the implementation of all construction-related mitigation measures associated with the proposed Project, including mitigation measures for construction-related air pollutant emissions.

- **MM-C (ATMP)-1. Construction Mitigation Oversight.**

  LAWA shall require Airfield and Terminal Modernization Project prime contractors to designate an individual responsible for ensuring implementation of all construction-related mitigation measures and LAWA policies/requirements.

Other Measures Considered

Section 4.1.1.2.7 above identifies the existing policies and Project features that have been incorporated into the unmitigated With Project construction emission calculations. To determine if additional measures were applicable, LAWA compiled and reviewed a broad array of potential measures from various sources, such as the FAA, the Airport Cooperative Research Program (ACRP), CARB, and SCAQMD. The review indicated that many of those potential measures are already being implemented at LAX under existing LAWA programs and requirements and/or would be incorporated into the proposed Project as Project features. Of the remaining measures, some were considered feasible to add as mitigation measures for the proposed Project, while others were determined to be not applicable or feasible to include as mitigation measures for the Project. **Appendix C.9** presents an overview of potential measures for the reduction of air pollutant emissions. The table indicates whether such measures are already being implemented at LAX, are proposed to be included in the Project as a design/operational feature or as a mitigation measure, or are considered to be not applicable to, or infeasible for, LAX and the proposed Project.

No additional feasible mitigation has been identified that would provide reduction of NO_X emissions from direct construction, nor has additional feasible mitigation been identified to reduce the aircraft taxi and delay emissions during the runway closure periods.

4.1.1.5.1.3 Significance of Impact After Mitigation

With implementation of Mitigation Measures MM-AQ/GHG (ATMP)-1 and 2, significant impacts associated with construction emissions would be reduced, but not to a level that would be less than significant. Specifically, even with implementation of all feasible construction-related mitigation measures, the proposed Project-related estimated incremental increases in construction-related

emissions of CO, VOC, NO_X, and SO_X would exceed the daily emission thresholds established by SCAQMD. The emissions of CO, VOC, and SO_X would exceed the construction emission thresholds during the periods when one of the north runways is closed to safely tie-in the Taxiway D extension. The runway closure period would require aircraft to taxi farther to the open runways. Once these connections are completed, taxi times would drop and would be similar to Without Project taxi times. Although these runway closures would be temporary (approximately 4 to 5 months in two different years) relative to the total proposed Project construction duration, they do represent peak day total construction emissions for all pollutants. Construction emissions of NO_X would exceed the construction emission thresholds in several years that do not include the runway closures. No other feasible mitigation measures have been identified that would further reduce these impacts to air quality. Therefore, impacts to air quality from Project-related construction emissions would be ***significant and unavoidable***.

4.1.1.5.2 Impact 4.1.1-2

Summary Conclusion for Impact 4.1.1-2: Operation of the proposed Project would result in estimated incremental increases in operations-related emissions that are greater than the daily mass emission thresholds established by SCAQMD. This would be a *significant impact* for operations. Even with mitigation, this would remain a *significant and unavoidable impact* for operations.

4.1.1.5.2.1 Operations Impacts

Based on the proposed Project construction schedule, as detailed in **Appendix C**, most of the improvements associated with the proposed Project would be completed in 2027; therefore, operational impacts associated with those improvements were analyzed for the first full year of operations, or 2028.

As noted in Section 4.1.1.4.1, the regional analysis of air quality impacts associated with operation of the proposed Project compares emissions from 2028 With Project to the 2018 baseline conditions to determine the significance of operational emissions under CEQA. Additionally, the 2028 With Project scenario was compared to the 2028 Without Project scenario for informational purposes; however, the level of significance of Project-related emissions was not determined using this comparison.

Comparison of 2028 With Project and 2018 Baseline Conditions

Table 4.1.1-10 compares the 2028 With Project operational emissions to 2018 baseline conditions. The incremental emissions were then compared to the significance thresholds for operations identified in Table 4.1.1-4. As shown, in 2028, operational emissions for CO and VOC would decrease compared to baseline conditions, but NO_X, SO_X, PM_{10}, and $PM_{2.5}$ operational emissions would increase.

Two specific changes regarding motor vehicle emissions occur when one compares the Future With Project scenario against baseline conditions: (i) the VMT increases due to regional growth in population and associated vehicle travel demand, and (ii) the engine exhaust emission factors (emission rates in grams per mile) decrease as older vehicles are replaced with newer ones that comply with cleaner emission standards. Note, however, that particulate matter emissions factors for paved road dust, tire wear, and brake wear do not change with time. For CO and VOC, the decrease in engine exhaust emission factors would be greater in magnitude than the increase in VMT between 2018 and 2028; therefore, the emissions of these pollutants would decrease when comparing the 2028 Future With Project conditions to 2018 baseline conditions.

Table 4.1.1-10
Operational Emissions – 2028 With Project Compared to 2018 Baseline

Scenario	CO (lbs/day)	VOC (lbs/day)	NO_X (lbs/day)	SO_X (lbs/day)	PM_{10} (lbs/day)	$PM_{2.5}$ (lbs/day)
2018 Baseline						
Aircraft & APU	24,618	4,358	25,176	2,249	254	254
GSE	6,583	140	955	1	26	23
Traffic & Parking	24,138	825	4,559	63	2,555	813
Stationary	0	0	0	0	0	0
2018 Baseline Totals	55,339	5,323	30,690	2,314	2,834	1,090
2028 With Project						
Aircraft & APU	31,515	4,350	31,058	2,748	291	291
GSE	4,111	46	386	1	8	7
Traffic & Parking	15,820	448	1,735	59	3,192	970
Stationary	11	62	20	0	1	1
2028 With Project Totals	51,456	4,906	33,199	2,808	3,492	1,268
Incremental Changes						
Aircraft & APU	6,897	(8)	5,882	499	37	37
GSE	(2,471)	(94)	(569)	0	(18)	(16)
Traffic & Parking	(8,319)	(377)	(2824)	(4)	638	157
Stationary	11	62	20	0	1	1
Incremental Change Totals	(3,883)	(417)	2,509	495	658	178
Threshold	550	55	55	150	150	55
Significant?	**No**	**No**	**Yes**	**Yes**	**Yes**	**Yes**

Source: **Appendix C** of this EIR.

Key:
APU = auxiliary power units; CO = carbon monoxide; GSE = ground support equipment; lbs/day = pounds per day; NO_X = nitrogen oxides; PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter; SO_X = sulfur oxides; VOC = volatile organic compounds; .

A similar emissions reduction would occur with respect to GSE emissions. As a result, although there would be more GSE equipment operating hours in 2028 under the Future With Project scenario, the cleaner GSE fleet would result in a decrease in emissions in 2028 compared to 2018 for all pollutants. However, although these emissions reductions would contribute to a decrease in emissions for CO and VOC, they would not outweigh the growth in emissions from the projected increase in aircraft and APU activity in 2028 as compared to 2018. As a result, NO_X emissions would be higher under the 2028 With Project scenario than under 2018 baseline conditions.

The fuel sulfur content in motor vehicle and aircraft fuels is not expected to change between 2018 and 2028. Even so, a slight decrease in SO_X emissions from motor vehicles would occur in 2028, which is likely due to increased fuel efficiency in newer vehicles (relative to the 2018 fleet mix). However, SO_X emissions from aircraft and APUs would increase because of projected increased activity levels. Overall, SO_X emissions would be higher under the 2028 With Project scenario as compared to 2018 baseline conditions.

The reduction in motor vehicle emissions noted above would also result in reduced PM_{10} and $PM_{2.5}$ emissions. However, as noted above, emission factors for dust sources (i.e., tire wear, brake wear, and paved road dust) are expected to remain constant between 2018 and 2028, and VMT would increase between 2018 and 2028. These factors would outweigh the decrease in motor vehicle emissions; thus,

PM_{10} and $PM_{2.5}$ emissions would increase due to the growth in motor vehicle trips between 2018 and 2028.

In summary, the total incremental emissions of NO_X, SO_X, PM_{10}, and $PM_{2.5}$ from operation of the proposed Project (i.e., 2028 With Project emissions compared to 2018 Baseline emissions) would exceed the SCAQMD regional daily emission operational thresholds; incremental operational emissions of CO and VOC would not exceed the thresholds. The exceedances of NO_X, SO_X, PM_{10}, and $PM_{2.5}$ SCAQMD operational emission thresholds mean that the proposed Project's operational emissions would contribute to localized adverse health impacts of these pollutants described in Section 4.1.1.1. Therefore, the proposed Project's operational emissions of NO_X, SO_X, PM_{10}, and $PM_{2.5}$ would result in a ***significant impact*** related to air quality.

Note that the ambient air quality standards set by CARB and USEPA are health-based standards, indicating that exposure to concentrations that are less than these standards would have negligible adverse health impacts. These standards for NO_2, SO_2, PM_{10}, and $PM_{2.5}$ are used as significance thresholds as described in Section 4.1.1.4 above. The operational impacts to ambient concentrations of NO_2, SO_2, PM_{10}, and $PM_{2.5}$ are discussed in Section 4.1.1.5.4 below. In addition, the health risk assessment associated with exposure to toxic organic and particulate matter is provided in Section 4.1.2, *Human Health Risk*. Finally, the potential effects of secondary ozone from the NO_X emissions are discussed in this section below under "Photochemical Modeling of Secondary Air Pollutants - Operations."

Comparison of 2028 With Project and 2028 Without Project

As noted in Section 4.1.1.4.1, operational emissions in 2028 With Project were compared to emissions in 2028 Without Project for informational purposes. The purpose of this comparison was to remove the influence of background growth and differences in motor vehicle emission factors between 2018 and, thereby, to highlight the air pollutant emissions impacts of the proposed Project compared to future emissions that are estimated to occur without the Project. The comparison between emissions from the 2028 With Project scenario and the 2028 Without Project scenario is provided in **Table 4.1.1-11**.

Table 4.1.1-11
Operational Emissions – 2028 With Project Compared to 2028 Without Project

Scenario	CO (lbs/day)	VOC (lbs/day)	NO_X (lbs/day)	SO_X (lbs/day)	PM_{10} (lbs/day)	$PM_{2.5}$ (lbs/day)
2028 Without Project						
Aircraft & APU	31,471	4,327	31,085	2,753	297	297
GSE	4,111	46	386	1	8	7
Traffic & Parking	15,557	440	1,721	58	3,135	953
Stationary	0	0	0	0	0	0
2028 Without Project Totals	51,140	4,813	33,193	2,812	3,440	1,256
2028 With Project						
Aircraft & APU	31,515	4,350	31,058	2,748	291	291
GSE	4,111	46	386	1	8	7
Traffic & Parking	15,820	448	1,735	59	3,192	970
Stationary	11	62	20	0	1	1
2028 With Project Totals	51,456	4,906	33,199	2,808	3,492	1,268
Incremental Changes						
Aircraft & APU	43	23	(27)	(5)	(6)	(6)
GSE	0	0	0	0	0	0
Traffic & Parking	262	8	14	1	57	17

Table 4.1.1-11
Operational Emissions – 2028 With Project Compared to 2028 Without Project

Scenario	CO (lbs/day)	VOC (lbs/day)	NO_X (lbs/day)	SO_X (lbs/day)	PM_{10} (lbs/day)	$PM_{2.5}$ (lbs/day)
Stationary	11	62	20	0	1	1
Incremental Change Totals	316	93	7	(4)	52	12
Threshold	550	55	55	150	150	55
Exceeds Threshold?[a]	No	Yes	No	No	No	No

Source: **Appendix C** of this EIR.

Note:

[a] As previously discussed, the 2028 With Project scenario was compared to the 2028 Without Project scenario for informational purposes; however, the level of significance of Project-related emissions was not determined using this comparison.

Key:

APU = auxiliary power units; CO = carbon monoxide; GSE = ground support equipment; lbs/day = pounds per day; NO_X = nitrogen oxides; PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter; SO_X = sulfur oxides; VOC = volatile organic compounds.

As discussed in Section 4.8, *Transportation*, there would be a slight increase in VMT in the 2028 With Project scenario compared to the 2028 Without Project scenario due to an increase in employment at LAX with the addition of Concourse 0 and Terminal 9 and operation of the proposed roadway system. This growth would result in an increase in exhaust and fugitive dust emissions from motor vehicles. Because the daily number of aircraft operations would not change between the two scenarios, aircraft takeoff, climb-out, and landing emissions, as well as GSE emissions would remain the same in each scenario. Aircraft taxi and idle emissions on the ground would change somewhat as a result of the reconfigured runway exits, taxi path, and terminal gate configurations, and the substantial decommissioning of the West Remote Gates in the With Project scenario. Slight emission decreases would also occur from operation of the APUs with implementation of the proposed Project due to the availability of pre-conditioned air and gate power at the new Terminal 9 and Concourse 0 facilities. The combined effect of these changes in emission sources would result in an increase in all pollutant emissions (i.e., CO, VOC, NO_X, SO_X, PM_{10}, and $PM_{2.5}$) under the 2028 With Project scenario as compared to the 2028 Without Project scenario. The increases in traffic from additional employee travel under the With Project scenario, as well as stationary source emissions from the new terminal operations account for the majority of the increased emissions. Although this analysis is presented for informational purposes only, as shown in Table 4.1.1-11, the incremental emissions from operation of the proposed Project compared to the 2028 Without Project scenario would exceed the SCAQMD significance threshold for VOC. This increase in VOC emissions would be associated primarily with emissions generated through the day-to-day operation of the new Terminal 9 and Concourse 0 facilities.

Photochemical Modeling of Secondary Air Pollutants - Operations

As discussed in Section 4.1.1.2.6, a 2018 decision by the Supreme Court of California determined that CEQA requires an EIR to contain an analysis that correlates the specific human health effects that would occur as a result of a project's significant air pollutant emissions. As further discussed in that section, two recent Draft EIRs completed photochemical modeling to evaluate changes in health end-point incidences related to significant emissions increases of O_3 and $PM_{2.5}$ precursors. The following analysis compares the results of these Draft EIRs to projected impacts from the proposed Project in order to assess health-related impacts of the proposed Project's increases in of O_3 and $PM_{2.5}$ precursors.

Norman Y. Mineta San Jose International Airport Master Plan Amendment

A comparison of the project-related emissions associated with the SJC Master Plan Amendment and the proposed Project is provided in **Table 4.1.1-12.** As shown in the table, the emissions of ozone precursors NO_X and VOC would be substantially less under the proposed Project than the emissions modeled for the SJC Master Plan Amendment Draft EIR, while the $PM_{2.5}$ emissions associated with the proposed Project would be 3.5 times higher.

Table 4.1.1-12
Photochemical Modeling Pollutant Emissions

Pollutant	Emissions (lbs/day)		
	SJC Master Plan Amendment Draft EIR	IBEC Draft EIR	Proposed Project
NO_X	5,643	99	2,509
VOC	57	~100	(417)
$PM_{2.5}$	51	89	178

Sources: City of San Jose, *Draft Environmental Impact Report for Amendment to Norman Y. Mineta San Jose International Airport Master Plan,* State Clearinghouse No. 2018102020, prepared by David J. Powers & Associates, Inc., November 2019. Available: https://www.sanjoseca.gov/Home/ShowDocument?id=44618; City of Inglewood, *Inglewood Basketball and Entertainment Center Project Draft Environmental Impact Report,* State Clearinghouse No. 2018021056, prepared by ESA and Fehr & Peers, December 2019. Available: https://www.cityofinglewood.org/1036/Murphys-Bowl-Proposed-NBA-Arena; **Appendix C** of this EIR.

Key:
IBEC = Inglewood Basketball and Entertainment Center; lbs/day = pounds per day; NO_X = nitrogen oxides; $PM_{2.5}$ = fine particulate matter; SJC = Norman Y. Mineta San Jose International Airport; VOC = volatile organic compounds.

If the proposed Project emissions were applied to the SJC site, the resulting health impacts from ozone would likely be the same as, or less than, those modeled for the SJC Master Plan Amendment Draft EIR, and potentially 3.5 times higher from $PM_{2.5}$. The resulting change in health end-point incidences would be <0.05 percent for both ozone and $PM_{2.5}$ emissions.

Inglewood Basketball and Entertainment Center Project Draft EIR

A comparison of the project-related emissions associated with the IBEC Project and the proposed Project is provided in Table 4.1.1-12. As shown in the table, the emissions of ozone precursor NO_X would be 25 times higher under the proposed Project than the emissions modeled for the IBEC Draft EIR, while emissions of ozone precursor VOC would be substantially lower than those modeled for the IBEC Project. The $PM_{2.5}$ emissions under the proposed Project would be 2 times higher than those modeled for the IBEC Project.

If the proposed Project emissions were applied to the IBEC site, the resulting health impacts from ozone would be 25 times higher than the IBEC results, if one conservatively only considers NO_X and disregards the substantially lower incremental VOC emissions. Applying this gross assumption to the IBEC results indicates that the impacts to human health end-points associated with the proposed Project would be approximately 0.008 percent (8/1,000ths of one percent) for all human health end-points analyzed in the IBEC Draft EIR. The IBEC Project human health impacts due to $PM_{2.5}$ are likely zero (see brief discussion in Section 4.1.1.2.6.2 above and the IBEC Project EIR[95]), the $PM_{2.5}$ impacts associated with the proposed Project are also likely to be approximately zero.

[95] City of Inglewood, *Inglewood Basketball and Entertainment Center Project Draft Environmental Impact Report,* State Clearinghouse No. 2018021056, prepared by ESA and Fehr & Peers, December 2019. Available: https://www.cityofinglewood.org/1036/Murphys-Bowl-Proposed-NBA-Arena.

Conclusion

As noted in Section 4.1.1.2.6.2, the findings from both the SJC Master Plan Amendment Draft EIR and the IBEC Project Draft EIR human health impact assessments indicate that the changes in emissions of ozone precursors and $PM_{2.5}$ from a single project do not "move the dial" with regard to regional human health impacts. The models available to analyze regional impacts are designed to address large, regional changes in emissions, such as those due to proposed emission control regulations that affect emissions across an entire region. Given the uncertainties in emissions, dispersion modeling, and human health concentration-response functions, the conclusion reached in these two studies was that the results to human health impacts were not statistically different than zero (i.e., no change). Applying gross emission ratios between the proposed Project and each of these studies similarly indicates that the impacts to human health due to changes in ozone and $PM_{2.5}$ precursors associated with the proposed Project would be essentially zero.

4.1.1.5.2.2 Mitigation Measures

As noted above, the proposed Project's operational emissions of NO_X, SO_X, PM_{10}, and $PM_{2.5}$ would result in a ***significant impact*** related to air quality. Mitigation proposed to reduce significant impacts related to air pollutant operational emissions is provided below. Most of the mitigation measures identified would serve to reduce both criteria air pollutants (i.e., NO_X, SO_X, PM_{10}, and $PM_{2.5}$) and GHG emissions, and are labeled accordingly.

- **MM-AQ/GHG (ATMP)-3. Parking Cool Roof.**

  LAWA shall include in the design requirements for the Airfield and Terminal Modernization Project that a cool roof be installed at the Terminal 9 parking facility to reduce energy use and urban heat-island effects. This requirement will not apply if solar panels are instead installed at the Terminal 9 parking facility.

- **MM-AQ/GHG (ATMP)-4. EV Charging Infrastructure.**

  LAWA shall install EV charging infrastructure in the Terminal 9 parking facility beyond the minimum amount required by code. The exact number of spaces and types of parking (Electrical Vehicle Supply Equipment [EVSE] or Electric Vehicle Charging Stations [EVCS]) shall be determined during project design and shall exceed the minimum requirements for EVSE and EVCS specified in the code at the time of design by at least 5 percent.

- **MM-AQ/GHG (ATMP)-5. Electric Vehicle Purchasing.**

  LAWA shall update the Electric Vehicle Purchasing Policy to require 100 percent of LAWA's light-duty vehicle fleet to be all-electric by 2031.

- **MM-AQ/GHG (ATMP)-6. Solar Energy Technology.**

  LAWA shall implement solar energy technology, such as, but not limited to, photovoltaic solar panels, on Airfield and Terminal Modernization Project buildings and facilities where feasible based on costs, grid tie-in capability, environmental clearance, compliance with FAR Part 77, and applicable FAA requirements for land leases and funding.

In addition to these measures, MM-T (ATMP)-1, the Vehicle Miles Traveled (VMT) Reduction Program presented in detail in Section 4.8., *Transportation*, of this EIR (specifically in Section 4.8.5.4.2), provides several strategies for reducing vehicular travel which, in turn, would reduce GHG and air pollutant emissions.

Other Measures Considered

Section 4.1.1.2.7 above identifies the existing policies and Project features that have been incorporated into the unmitigated With Project operations emission calculations. To determine if additional measures were applicable, LAWA compiled and reviewed a broad array of potential measures from various sources such as the FAA, ACRP, CARB, and SCAQMD. The review indicated that many of those potential measures are already being implemented at LAX under existing LAWA programs and requirements and/or would be incorporated into the proposed Project as Project features. Of the remaining measures, some were considered feasible to add as mitigation measures for the proposed Project, while others were determined to be not applicable or feasible to include as mitigation measures for the Project. **Appendix C.9** presents an overview of potential measures for the reduction of air pollutant emissions. The table indicates whether such measures are already being implemented at LAX, are proposed to be included in the Project as a design/operational feature or as a mitigation measure, or are considered to be not applicable to, or infeasible for, LAX and the proposed Project. No additional feasible mitigation has been identified that would provide reduction of NO_X, SO_X, PM_{10}, or $PM_{2.5}$ emissions from operations.

Quantification of Air Pollutant Emissions Reductions Associated with Mitigation

While all the mitigation measures presented above would serve to reduce operations-related air pollutant emissions associated with the proposed Project, only MM-T (ATMP)-1 provides a reasonable basis to estimate the amount of emission reduction accomplished by the mitigation. The other mitigation measures are more general in nature or are dependent on specific design characteristics that would be defined during more detailed levels of planning.

MM-T (ATMP)-1 requires a reduction in daily employee VMT by the equivalent of 16,450 VMT. Based on motor vehicle emission factors applicable in 2028, this would result in a reduction of approximately 1.5 pounds per day for NO_X, 0.1 pound per day for SO_X, 5.5 pounds per day for PM_{10}, and 1.7 pounds per day for $PM_{2.5}$. Comparing the reduction results with the incremental project emissions shown in Table 4.1.1-10 indicates that the mitigation would reduce operational emissions, but not below the level of significance for any of the criteria pollutants that were determined to be significant (i.e., NO_X, SO_X, PM_{10}, and $PM_{2.5}$).

4.1.1.5.2.3 Significance of Impact After Mitigation

With implementation of Mitigation Measures MM-AQ/GHG (ATMP)-3 through 7 and MM-T (ATMP)-1, significant impacts associated with operational emissions would be reduced, but not to a level that would be less than significant. Specifically, even with implementation of all feasible operations-related mitigation measures, the Project-related estimated incremental increases in daily operations-related emissions of NO_X, SO_X, PM_{10}, and $PM_{2.5}$ would exceed the daily emission thresholds established by SCAQMD. No other feasible mitigation measures have been identified at this time that would further reduce impacts to air quality. Therefore, impacts to air quality from Project-related operational emissions would be ***significant and unavoidable***.

4.1.1.5.3 Impact 4.1.1-3

Summary Conclusion for Impact 4.1.1-3: Construction of the proposed Project would result in estimated incremental ambient concentrations due to construction-related emissions that would be less than the concentration thresholds established by SCAQMD. This would be a *less significant impact* for construction.

4.1.1.5.3.1 Construction Impacts

As discussed in Section 4.1.1.2, the local effects (measured by air pollutant concentrations) from the on-site portion of construction emissions were evaluated at nearby sensitive receptor locations that could

be affected by the proposed Project consistent with the methodologies in the SCAQMD's *Final Localized Significance Threshold Methodology*. The SCAQMD recommends that lead agencies perform project-specific air quality modeling for larger projects; therefore, Project-specific dispersion modeling was used to assess local construction impacts.

Table 4.1.1-13 summarizes the results of air dispersion modeling of the Project construction sources. As shown in Table 4.1.1-13, local construction concentrations would be less than the SCAQMD concentration thresholds for all pollutants and averaging periods. Therefore, the proposed Project's localized construction concentrations would result in a ***less than significant impact***.

Table 4.1.1-13
Project Peak Construction Concentrations (µg/m³)

Pollutant	Averaging Period[a]	Construction (µg/m³)	Background (µg/m³)	Total (µg/m³)[b]	Threshold (µg/m³)[a]	Significant?
CO	1-hr CAAQS	817	2,406	3,223	23,000	No
	8-hr CAAQS	137	1,833	1,970	10,000	No
NO_2	1-hr CAAQS	110	154	264	339	No
	Annual CAAQS	8	19	27	57	No
SO_2	1-hr CAAQS	10	31	41	655	No
	1-hr NAAQS	9	18	28	196	No
	24-hr CAAQS	2	10	13	105	No
PM_{10}	24-hr	3.2	--[c]	3.2	10.4	No
	Annual	0.8	--[c]	0.8	1.0	No
$PM_{2.5}$	24-hr	1.1	--[c]	1.1	10.4	No

Source: **Appendix C** of this EIR.

Notes:

[a] NAAQS and CAAQS often have the same averaging period, but usually have different standard values and may have different methods of determining compliance with each standard.

[b] Values may not add due to rounding.

[c] PM_{10} and $PM_{2.5}$ thresholds are Project only values; therefore, are not added to background concentrations.

Key:

µg/m³ = micrograms per cubic meter; CAAQS = California Ambient Air Quality Standard; CO = carbon monoxide; hr = hour; NAAQS = National Ambient Air Quality Standard; NO_2 = nitrogen dioxide; PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter; SO_2 = sulfur dioxide.

4.1.1.5.3.2 Mitigation Measures

Because the proposed Project would result in a ***less than significant impact*** related to localized construction concentrations, no mitigation is required.

4.1.1.5.3.3 Significance of Impact After Mitigation

As indicated above, no mitigation is required to address localized construction concentrations. The proposed Project would result in a ***less than significant impact***.

4.1.1.5.4 Impact 4.1.1-4

Summary Conclusion for Impact 4.1.1-4: Operation of the proposed Project would result in estimated incremental ambient concentrations due to operations-related emissions that would be greater than the concentration thresholds established by SCAQMD. This would be a *significant impact* for operations. Even with mitigation, this would remain a *significant and unavoidable impact* for operations.

4.1.1.5.4.1 Operations Impacts

As discussed in Section 4.1.1.2, the local effects (measured by air pollutant concentrations) from the on-site portion of daily operational emissions were evaluated at nearby sensitive receptor locations that could be affected by the proposed Project consistent with the methodologies in the SCAQMD's *Final Localized Significance Threshold Methodology*. The SCAQMD recommends that lead agencies perform project-specific air quality modeling for larger projects; therefore, Project-specific dispersion modeling was used to assess local operational impacts.

Comparison of 2028 With Project and 2018 Baseline

Table 4.1.1-14 summarizes the 2028 With Project incremental increases in peak concentrations relative to 2018 baseline conditions. The incremental concentration increases were then compared to the significance thresholds for operations identified in Table 4.1.1-5. As shown in Table 4.1.1-13, the Project-related incremental change in pollutant concentrations resulting from operational activities would not exceed the local operational concentration thresholds for CO, NO_2, SO_2, and $PM_{2.5}$ at any receptor but would exceed the local operational concentration thresholds for PM_{10} at one or more receptors. The exceedances of PM_{10} concentration thresholds mean that the proposed Project's operational emissions of this pollutant would contribute to localized adverse health impacts of this pollutant described in Section 4.1.1.1. Therefore, the localized operational concentrations of PM_{10} would result in a ***significant impact*** related to air quality.

Table 4.1.1-14
Operational Concentrations – 2028 With Project Compared to 2018 Baseline

Pollutant	Averaging Period[a]	Incremental Peak (µg/m³)[b]	Background (µg/m³)	Total (µg/m³)	Threshold	Significant?
CO	1-hr CAAQS	1,248	2,406	3,654	23,000	No
	8-hr NAAQS	336	1,833	2,169	10,000	No
NO_2	1-hr CAAQS	336	Included[c]	336	339	No
	Annual CAAQS	14	19	33	57	No
SO_2	1-hr CAAQS	47	31	78	655	No
	1-hr NAAQS	30	18	48	196	No
	24-hr CAAQS	8	10	18	105	No
PM_{10}	24-hr	6.2	--[d]	6.2	2.5	**Yes**
	Annual	3.7	--[d]	3.7	1.0	**Yes**
$PM_{2.5}$	24-hr	1.7	--[d]	1.7	2.5	No

Source: See **Appendix C** of this EIR.

Notes:

[a] NAAQS and CAAQS often have the same averaging period, but usually have different standard values and may have different methods of determining compliance with each standard.

[b] The incremental peak concentration was determined by calculating the differences between the 2028 With Project and 2018 baseline scenarios at each receptor, then selecting the maximum value across all receptors.

[c] Background NO_2 concentrations were included in the AERMOD input file; thus, AERMOD directly calculated the total of Project plus background.

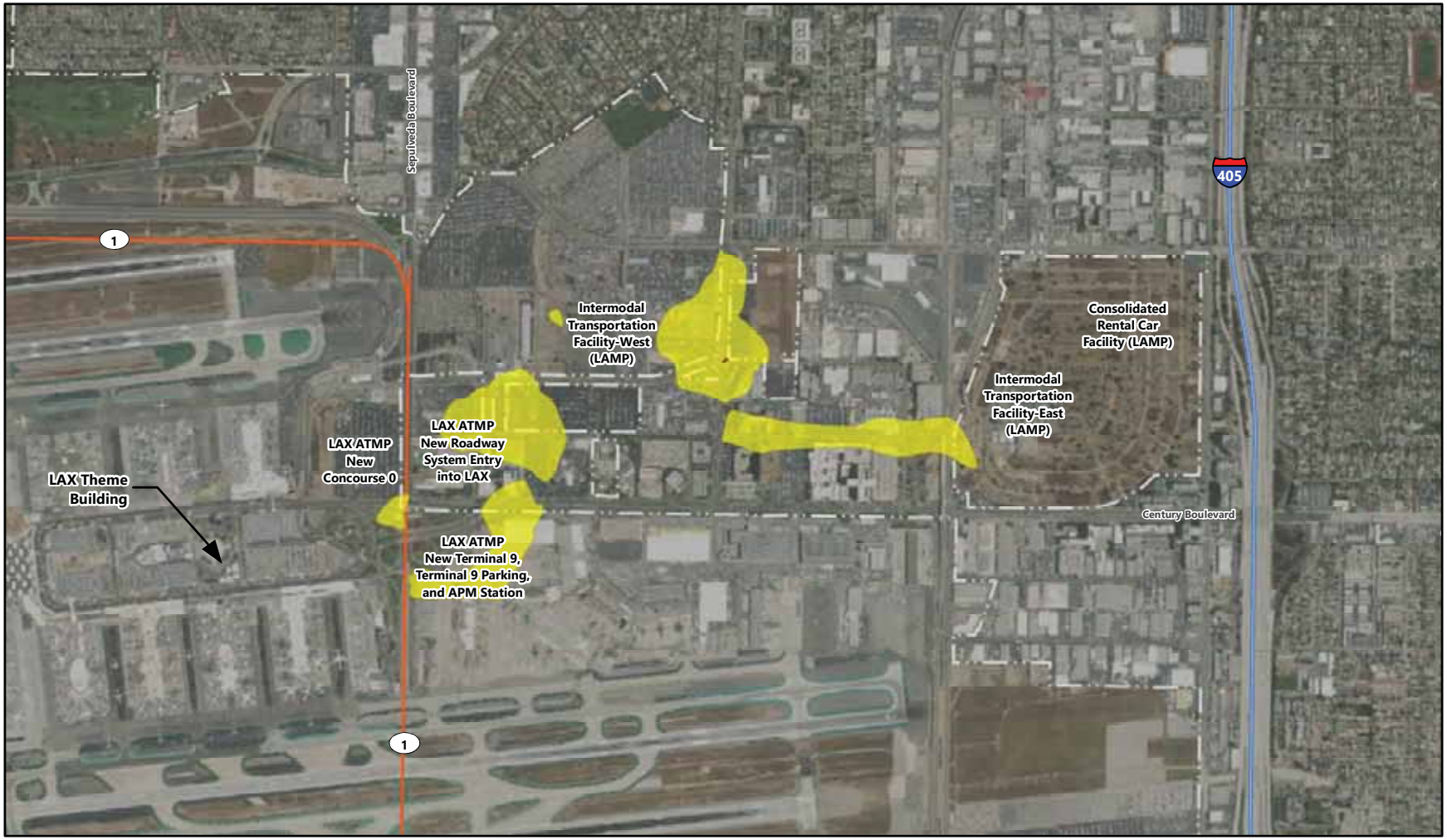
[d] PM_{10} and $PM_{2.5}$ thresholds are Project-only values; thus, they are not added to background concentrations.

Key:
µg/m³ = micrograms per cubic meter; CAAQS = California Ambient Air Quality Standard; CO = carbon monoxide; hr = hour; NAAQS = National Ambient Air Quality Standard; NO_2 = nitrogen dioxide; PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter; SO_2 = sulfur dioxide.

The geographic extent of the 24-hour PM_{10} incremental concentration exceedances in 2028 are shown on **Figure 4.1.1-2**. Two general receptor locations are above the threshold, one at the corner of 96th Street and Airport Boulevard, near the (future) ITF West facility, and the other on Aviation Boulevard just north of Century Boulevard, near the (future) ITF East, CONRAC, and Metro's Airport Metro Connector (AMC) 96th Street Transit Station. Similar locations can be seen for the Annual PM_{10} incremental concentration exceedances shown on **Figure 4.1.1-3**. These areas are in a commercial zone with the highest levels in the roadways, and not near residential areas.

Comparison of 2028 With Project and 2028 Without Project

As described in Section 4.1.1.4.2, concentrations associated with emissions in 2028 With Project were compared to concentrations in 2028 Without Project for informational purposes. The purpose of this comparison was to remove the influence of background growth and differences in motor vehicle emission factors between 2018 and, thereby, to highlight the air pollutant concentration impacts of the proposed Project compared to future concentrations that are estimated to occur without the Project. To complete the analysis, a two-step approach was used. First the future concentrations under the 2028 Without Project scenario were determined, as shown in **Table 4.1.1-15**. The results in the Total column of Table 4.1.1-15 were then compared to the 2028 With Project results in the Total column of Table 4.1.1-14 above. The changes in total concentrations for each pollutant and averaging period are summarized in **Table 4.1.1-16**.



Legend

- LAX Property Boundary

Project Incremental 24-Hour PM_{10} Concentrations

- Peak Concentration Area ≥ 2.5 µg/m³
- Peak Concentration Area ≥ 6.0 µg/m³
- Interstate Highway
- California State Highway

Note:

1. Areas above the 2.5 µg/m³ significance thresholds are within the yellow contours.

0 0.25 0.5 Miles

Scale

Sources: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, October 2020

Prepared by: CDM Smith, October 2020

LAX Airfield and Terminal Modernization Project

Locations of 2028 With Project Incremental 24-Hour Concentrations Above SCAQMD CEQA Significance Threshold

Figure **4.1.1-2**



Legend

- LAX Property Boundary
- Project Incremental Annual PM_{10} Concentrations
  - Peak Concentration Area ≥ 1.0 µg/m³
  - Peak Concentration Area ≥ 3.5 µg/m³
  - Interstate Highway
  - California State Highway

Note:
1. Areas above the 1.0 µg/m³ significance thresholds are within the yellow contours.

0 0.25 0.5 Miles
Scale

Sources: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, October 2020
Prepared by: CDM Smith, October 2020

LAX Airfield and Terminal Modernization Project

Locations of 2028 With Project Incremental Annual Concentrations Above SCAQMD CEQA Significance Threshold

Figure **4.1.1-3**

Table 4.1.1-15
Operational Concentrations – 2028 Without Project Compared to 2018 Baseline Conditions

Pollutant	Averaging Period[a]	Incremental Peak (µg/m³)[b]	Background (µg/m³)	Total (µg/m³)	Threshold	Exceeds Threshold?[c]
CO	1-hr CAAQS	1,277	2,406	3,683	23,000	No
	8-hr NAAQS	379	1,833	2,212	10,000	No
NO_2	1-hr CAAQS	403	Included[d]	403	339	**Yes**
	Annual CAAQS	15	19	34	57	No
SO_2	1-hr CAAQS	64	31	95	655	No
	1-hr NAAQS	26	18	44	196	No
	24-hr CAAQS	10	10	20	105	No
PM_{10}	24-hr	5.4	--[e]	5.4	2.5	**Yes**
	Annual	3.8	--[e]	3.8	1.0	**Yes**
$PM_{2.5}$	24-hr	1.4	--[e]	1.4	2.5	No

Source: See **Appendix C** of this EIR.

Notes:

[a] NAAQS and CAAQS often have the same averaging period, but usually have different standard values and may have different methods of determining compliance with each standard.

[b] The incremental peak concentration was determined by calculating the differences between the 2028 Without Project and 2018 baseline conditions at each receptor, then selecting the maximum value across all receptors.

[c] The 2028 With Project scenario was compared to 2018 baseline conditions for informational purposes; however, the level of significance of Project-related emissions was not determined using this comparison

[d] Background NO_2 concentrations were included in the AERMOD input file; thus, AERMOD directly calculated the total of Project plus background.

[e] PM_{10} and $PM_{2.5}$ are not added to background concentrations.

Key:
µg/m³ = micrograms per cubic meter; CAAQS = California Ambient Air Quality Standard; CO = carbon monoxide; hr = hour; NAAQS = National Ambient Air Quality Standard; NO_2 = nitrogen dioxide; PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter; SO_2 = sulfur dioxide.

Table 4.1.1-16
Operational Concentration Comparison – 2028 With Project Compared to 2028 Without Project

Pollutant	Averaging Period[a]	2028 With Project Total (µg/m³)	2028 Without Project Total (µg/m³)	Change Relative to 2028 Without Project (µg/m³)[b]	Change Relative to 2028 Without Project (%)[b]
CO	1-hr CAAQS	3,654	3,683	(29)	(0.8%)
	8-hr NAAQS	2,169	2,212	(43)	(2.0%)
NO_2	1-hr CAAQS	336	403	(67)	(19.9%)
	Annual CAAQS	33	34	(1)	(3.0%)
SO_2	1-hr CAAQS	78	95	(17)	(21.8%)
	1-hr NAAQS	48	44	4	8.3%
	24-hr CAAQS	18	20	(2)	(11.1%)
PM_{10}	24-hr	6.2	5.4	0.8	12.9%
	Annual	3.7	3.8	(0.1)	(2.7%)
$PM_{2.5}$	24-hr	1.7	1.4	0.3	17.6%

Table 4.1.1-16
Operational Concentration Comparison – 2028 With Project Compared to 2028 Without Project

Pollutant	Averaging Period[a]	2028 With Project Total (µg/m³)	2028 Without Project Total (µg/m³)	Change Relative to 2028 Without Project (µg/m³)[b]	Change Relative to 2028 Without Project (%)[b]

Source: See **Appendix C** of this EIR.

Notes:

[a] NAAQS and CAAQS often have the same averaging period, but usually have different standard values and may have different methods of determining compliance with each standard.

[b] As previously discussed, the 2028 With Project scenario was compared to the 2028 Without Project scenario for informational purposes; however, the level of significance of Project-related emissions was not determined using this comparison.

Key:

µg/m³ = micrograms per cubic meter; CAAQS = California Ambient Air Quality Standard; CO = carbon monoxide; hr = hour; NAAQS = National Ambient Air Quality Standard; NO_2 = nitrogen dioxide; PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter; SO_2 = sulfur dioxide.

The effect of the conditions under 2028 With Project relative to conditions under 2028 Without Project generally includes improvements in airfield operations due to shorter distances between the new Concourse 0 and Terminal 9 to the primary departure runways. However, the anticipated additional employees assumed under the 2028 With Project scenario would increase the landside traffic trips associated with these employees. Additionally, the redesigned roadway system under the proposed Project, and the unavailability of the Concourse 0 site for surface parking (which the site would be used for under the 2028 Without Project Scenario), would result in increased peak traffic volumes on the 96th Street/Airport Boulevard intersection. This, in turn, would increase PM_{10} and $PM_{2.5}$ impacts which are dominated by road dust generated by traffic roadway travel in the area near the ITF West site. The overall impact to the gaseous pollutants (CO, NO_2, and SO_2) would be positive with peak concentrations being generally lower under the 2028 With Project scenario.

4.1.1.5.4.2 Mitigation Measures

As noted above, the proposed Project's operational concentrations of PM_{10} would result in a ***significant impact*** related to air quality. Mitigation proposed to reduce significant impacts related to air pollutant operational emissions were summarized above in Section 4.1.1.5.2.2. The mitigation measures that would reduce operational PM_{10} emissions would also serve to reduce operational PM_{10} concentrations.

Other Measures Considered

Section 4.1.1.2.7 above identifies the existing policies and Project features that have been incorporated into the unmitigated With Project operations emission calculations. To determine if additional measures were applicable, LAWA compiled and reviewed a broad array of potential measures from various sources such as the FAA, ACRP, CARB, and SCAQMD. The review indicated that many of those potential measures are already being implemented at LAX under existing LAWA programs and requirements and/or would be incorporated into the proposed Project as Project features. Of the remaining measures, some were considered feasible to add as mitigation measures for the proposed Project, while others were determined to be not applicable or feasible to include as mitigation measures for the Project. **Appendix C.9** presents an overview of potential measures for the reduction of air pollutant emissions. The table indicates whether such measures are already being implemented at LAX, are proposed to be included in the Project as a design/operational feature or as a mitigation measure, or are considered to

be not applicable to, or infeasible for, LAX and the proposed Project. No additional feasible mitigation has been identified that would provide reduction of PM_{10} emissions and concentrations from operations.

Quantification of Air Pollutant Emissions Reductions Associated with Mitigation

While all the mitigation measures presented above would serve to reduce operations-related air pollutant emissions associated with the proposed Project, only MM-T (ATMP)-1 provides a reasonable basis to estimate the amount of emission reduction accomplished by the mitigation. The other mitigation measures are more general in nature or are dependent on specific design characteristics that would be defined during more detailed levels of planning.

MM-T (ATMP)-1 requires a reduction in daily employee VMT by the equivalent of 16,450 VMT. Based on motor vehicle emission factors applicable in 2028, this would result in a reduction of approximately 5.5 pounds per day for PM_{10} (about one percent of the proposed Project incremental PM_{10} traffic emissions). Comparing the reduction results with the incremental project emissions indicates that the mitigation would reduce operational emissions, but not below the level of significance for PM_{10} concentrations.

4.1.1.5.4.3 Significance of Impact After Mitigation

With implementation of Mitigation Measures MM-AQ/GHG (ATMP)-3 through 7 and MM-T (ATMP)-1, significant impacts associated with air pollutant concentrations from operational emissions would be reduced, but not to a level that would be less than significant. Specifically, even with implementation of all feasible operations-related mitigation measures, the Project-related estimated incremental increases in operations-related concentrations of PM_{10} would exceed the significance thresholds established by SCAQMD. No other feasible mitigation measures have been identified at this time that would further reduce impacts to local operational air quality (i.e., concentrations). Therefore, impacts to air quality from Project-related operational concentrations would be ***significant and unavoidable***.

4.1.1.6 Cumulative Impacts

Cumulative impacts associated with the proposed Project, in conjunction with other development projects, are addressed below.

4.1.1.6.1 Cumulative Construction Impacts

Construction air quality impacts tend to be primarily local in nature (e.g., impacts such as fugitive dust and construction equipment emissions are mostly realized in the immediate area around a construction site), although construction-related air pollutant emissions also contribute incrementally to degradation of regional ambient air quality. Cumulative projects with the most notable potential to contribute to cumulative construction air quality impacts are those that would add to the construction-related impacts associated with the proposed Project, and that would be under construction at the same time and in the same general vicinity as the proposed Project. As such, the geographic study area for evaluation of cumulative construction air quality impacts is focused primarily on projects at LAX and the immediate surroundings. A list of other development projects at and immediately adjacent to LAX whose construction could overlap with construction of the proposed Project is provided in Table 3-1 of Chapter 3, *Overview of Project Setting.* Estimated emissions from construction of these cumulative projects are summarized in **Table 4.1.1-17**. Due to the uncertainty of the multiple project schedules, the SCAQMD construction thresholds in tons per quarter were used.

Table 4.1.1-17
Cumulative Construction Projects Peak Quarter Emissions Estimates (tons/quarter)

	Project		CO	VOC	NO_X	SO_X	PM_{10}	$PM_{2.5}$
No.[e]	Airfield and Terminal Modernization Project (Proposed Project)[a]	Direct Emissions	15.4	1.7	5.1	<0.1	0.8	0.3
		Total Direct and Indirect Emissions	197.7	17.3	36.2	7.8	1.5	0.9
1	LAX Northside Development		6.8	4.4	1.9	<0.1	1.0	0.3
2	Terminals 2 and 3 Modernization Project		5.8	2.2	3.4	<0.1	1.0	0.4
3	LAX Landside Access Modernization Program		4.7	0.3	5.0	<0.1	1.2	0.3
4	Terminal 4 Modernization Project		1.3	2.1	2.0	<0.1	1.2	0.3
5	LAX Airfield Bus Yard Facility		--- [b]	--- [b]	--- [b]	--- [b]	--- [b]	--- [b]
6	Runway 7R-25L Rehabilitation		--- [b]	--- [b]	--- [b]	--- [b]	--- [b]	--- [b]
7	Midfield Satellite Concourse (MSC) South Project		3.5	0.4	1.3	<0.1	1.0	0.2
8	Airport Metro Connector 96th Street Transit Station		2.2	2.7	2.4	<0.1	0.5	0.3
9	Terminal 6 Renovation		18.2	0.5	2.6	<0.1	0.3	0.1
10	Various Water Pipeline Projects		--- [c]	--- [c]	--- [c]	--- [c]	--- [c]	--- [c]
NA	Miscellaneous Projects and Improvements		23.9	6.4	32.3	<1	4.2	1.7
Total from Other Construction Project Emissions			66.5	19.1	50.9	<1	10.4	3.6
Total Cumulative Construction Project Emissions			**264.2**	**36.4**	**87.1**	**8.8**[d]	**11.9**	**4.5**
SCAQMD Construction Emission Significance Thresholds			24.75	2.5	2.5	6.75	6.75	2.5
Emissions Exceed SCAQMD Project-Level Threshold?			Yes	Yes	Yes	Yes	Yes	Yes

Sources: City of Los Angeles, Los Angeles World Airports, *Final Environmental Assessment Los Angeles International Airport (LAX) Receiving Station "X"*, Section 4.1 – Air Quality, June 2019; City of Los Angeles, Los Angeles World Airports, *Final Environmental Impact Report for Los Angeles International Airport (LAX) Northside Plan Update*, (SCH 2012041003), Section 4.2 – Air Quality, December 2014; City of Los Angeles, Los Angeles World Airports, *Final Environmental Impact Report for Los Angeles International Airport (LAX) Terminals 2 and 3 Modernization Project*, (SCH 2016081034), Section 4.1.1 – Air Quality, June 2017; City of Los Angeles, Los Angeles World Airports, *Final Environmental Impact Report for Los Angeles International Airport (LAX) Landside Access Modernization Program*, (SCH 2015021014), Section 4.2.1 – Air Quality, February 2017; City of Los Angeles, Los Angeles World Airports, *Final Negative Declaration for the Los Angeles International Airport Terminal 4 Modernization Project*, Section 4.3 – Air Quality, July 2020; City of Los Angeles, Los Angeles World Airports, *Final Environmental Impact Report for Los Angeles International Airport (LAX) Midfield Satellite Concourse*, (SCH 2013021020), Section 4.1 – Air Quality, June 2014; Los Angeles County Metropolitan Transportation Authority, *Airport Metro Connector 96th Street Transit Station Final Environmental Impact Report*, (SCH 2015021009), Section 3.1 – Air Quality, November 2016; and City of Los Angeles, Los Angeles World Airports, *Draft Initial Study / Negative Declaration - Los Angeles International Airport (LAX) Terminal 6 Renovation Project*, Section III – Air Quality, January 2020.

Notes:

[a] Project construction is estimated to occur from 2021 to 2028. Peak quarter emissions are presented in this table, which include direct construction emissions from on-site construction equipment and regional vehicle travel for material deliveries and worker trips, as well as indirect emission from aircraft during temporary runway closures to safely complete connections from the new taxiways to the north runways. Note that without the temporary runway closures, the SO_X emissions would be less than 0.1 ton in the peak quarter, and less than the significance thresholds for the total cumulative emissions.

[b] Based on the anticipated construction schedule, this project is not anticipated to result in overlapping construction emissions with the proposed Project during the estimated combined peak day, anticipated to occur in 2023.

[c] Various Water Pipeline Projects are accounted for in Miscellaneous Projects and Improvements.

[d] Note that without the temporary runway closures, the SO_X emissions would be less than 0.1 ton in the peak quarter, and less than the significance thresholds for the total cumulative emissions.

[e] Numbers correspond to Table 3-1 and Figure 3-1 in Chapter 3, *Overview of Project Setting*.

As shown in Table 4.1.1-17, cumulative construction emissions of CO, VOC, NO_X, SO_X, PM_{10}, and $PM_{2.5}$ would exceed SCAQMD's quarterly construction emission significance thresholds. Therefore, cumulative construction emissions of these pollutants would be cumulatively significant.

SCAQMD has provided guidance on an acceptable approach to addressing the cumulative impacts issue for air quality.[96] This guidance states as follows: "As Lead Agency, the AQMD uses the same significance thresholds for project specific and cumulative impacts for all environmental topics analyzed in an Environmental Assessment or EIR … Projects that exceed the project-specific significance thresholds are considered by the SCAQMD to be cumulatively considerable. … Conversely, projects that do not exceed the project-specific thresholds are generally not considered to be cumulatively significant."

Construction of the proposed Project would exceed the Project-specific construction emission thresholds for CO, VOC, NO_X, and SO_X, as shown in Table 4.1.1-8. As a result, based on the SCAQMD cumulative impact guidance discussed above, the contribution of the proposed Project to cumulative construction-related air pollutant emissions impacts would be ***cumulatively considerable*** for CO, VOC, NO_X, and SO_X. Although construction emissions impacts associated with other projects at LAX would be reduced through the same types of measures to be implemented for the proposed Project, mainly the requirements to utilize heavy trucks that are model year 2010 or newer and to utilize off-road equipment with Tier 4F engines, the cumulative impact would remain significant, especially relative to the amount of emissions associated with the proposed Project's temporary runway closures. The cumulative construction impact would be ***significant and unavoidable.***

4.1.1.6.2 Cumulative Operational Impacts

Operations of the proposed Project would exceed the Project-specific operations emission thresholds for NO_X, SO_X, PM_{10}, and $PM_{2.5}$, as shown in Table 4.1.1-10, and would exceed the Project-specific operational concentration thresholds for $PM_{10,}$ as shown in Table 4.1.1-14. As a result, based on the SCAQMD cumulative impact guidance discussed above, the contribution of the proposed Project to cumulative operations-related air quality impacts would be ***cumulatively considerable*** for NO_X, SO_X, PM_{10}, and $PM_{2.5}$. The mitigation measures identified for the proposed Project would also apply to the cumulative operational impacts, and the cumulative impact would remain significant. The cumulative operational impact would be ***significant and unavoidable.***

4.1.1.7 Summary of Impact Determinations

Table 4.1.1-18 summarizes the impact determinations of the proposed Project related to air quality, as described above in the detailed discussion in Sections 4.1.1.5 and 4.1.1.6. Impact determinations are based on the significance criteria presented in Section 4.1.1.4, and the information and data sources cited throughout Section 4.1.1.

[96] South Coast Air Quality Management District, *White Paper on Potential Control Strategies to Address Cumulative Impacts from Air Pollution, Appendix D – Cumulative Impact Analysis Requirements Pursuant to CEQA*, August 2003, page D-3.

Table 4.1.1-18
Summary of Impacts and Mitigation Measures Associated with the Proposed Project Related to Air Quality

Environmental Impacts	Impact Determination	Mitigation Measures	Level of Significance After Mitigation
Impact 4.1.1-1: Construction of the proposed Project would result in estimated incremental increases in construction-related emissions that are greater than the daily mass emission thresholds established by SCAQMD. This would be a ***significant and unavoidable impact*** for construction.	Construction: Significant (NO_X) Significant (CO, VOC, SO_X; short-term – approx. 4.5 months)[1] Operations: Not Applicable	Construction: MM-AQ/GHG (ATMP)-1. Rock Crushing Operations. MM-AQ/GHG (ATMP)-2. Use of Renewable Diesel Fuel. MM-C (ATMP)-1. Construction Mitigation Oversight. Operations: Not Applicable	Construction: Significant and Unavoidable (NO_X) Significant and Unavoidable (CO, VOC, SO_X; short-term – approx. 4.5 months) [1] Operations: Not Applicable
Impact 4.1.1-2: Operation of the proposed Project would result in estimated incremental increases in operations-related emissions that are greater than the daily mass emission thresholds established by SCAQMD. This would be a ***significant and unavoidable impact*** for operations.	Construction: Not Applicable Operations: Significant (NO_X, SO_X, PM_{10}, $PM_{2.5}$)	Construction: Not Applicable Operations: MM-AQ/GHG (ATMP)-3. Parking Cool Roof. MM-AQ/GHG (ATMP)-4. EV Charging Infrastructure. MM-AQ/GHG (ATMP)-5. Electric Vehicle Purchasing. MM-AQ/GHG (ATMP)-6. Solar Energy Technology. MM-T (ATMP)-1. Vehicle Miles Traveled (VMT) Reduction Program.	Construction: Not Applicable Operations: Significant and Unavoidable (NO_X, SO_X, PM_{10}, $PM_{2.5}$)
Impact 4.1.1-3: Construction of the proposed Project would result in estimated incremental ambient concentrations due to construction-related emissions that would be less than the concentration thresholds established by SCAQMD. This would be a ***less than significant impact*** for construction.	Construction: Less than Significant Operations: Not Applicable	No mitigation is required	Construction: Less than Significant Operations: Not Applicable

Table 4.1.1-18
Summary of Impacts and Mitigation Measures Associated with the Proposed Project Related to Air Quality

Environmental Impacts	Impact Determination	Mitigation Measures	Level of Significance After Mitigation
Impact 4.1.1-4: Operation of the proposed Project would result in estimated incremental ambient concentrations due to operations-related emissions that would be greater than the concentration thresholds established by SCAQMD. This would be a ***significant and unavoidable impact*** for operations.	Construction: Not Applicable Operations: Significant (PM_{10})	Construction: Not Applicable Operations: MM-AQ/GHG (ATMP)-3. Parking Cool Roof. MM-AQ/GHG (ATMP)-4. EV Charging Infrastructure. MM-AQ/GHG (ATMP)-5. Electric Vehicle Purchasing. MM-AQ/GHG (ATMP)-6. Solar Energy Technology. MM-T (ATMP)-1. Vehicle Miles Traveled (VMT) Reduction Program.	Construction: Not Applicable Operations: Significant and Unavoidable (PM_{10})

Note:
[1] Short-term impacts would result from temporary runway closures during construction.

4.1.2 Human Health Risk

4.1.2.1 Introduction

The proposed Project would make certain improvements within the north airfield, develop a new concourse and terminal with new gates, and provide for ground access (roadway) improvements to help relieve traffic congestion on Sepulveda Boulevard and provide landside access to the new terminal. Although the proposed Project itself would not result in any changes to future aviation activity levels projected for LAX at build-out, the modifications and additions to the airfield, terminals, and ground access facilities would alter the locations and amounts of toxic air contaminants (TAC) released by aircraft, ground support equipment (GSE), vehicles, and stationary sources in ways that could result in impacts on human health. In addition, construction of the proposed improvements would release TAC.

As with all activities at facilities that accommodate vehicles and equipment that consume fuel, activities at LAX release TAC to the air. These TAC may come from aircraft; GSE; other motor vehicles; combustion of fossil fuels to produce hot water, steam, and power; and other sources. These operational releases, and releases during construction activities, could have an impact on people living and working in the vicinity of the airport. Impacts to human health associated with TAC releases may include increased cancer risks, increased chronic (long-term) non-cancer health hazards, and increased acute (short-term) non-cancer health hazards from inhalation of TAC.

The objective of this Human Health Risk Assessment (HHRA) is to assess potential health impacts from changes in TAC exposure from constructing and operating the proposed Project. For this analysis, construction of the proposed Project is assumed to begin in 2021 and end in 2028, with operations starting in 2028. Operational emissions were quantified for existing conditions (2018) and build-out of the proposed Project (2028). The approach and methods used in this HHRA have been consistently applied over several years as part of EIRs prepared to evaluate LAWA projects. The analysis discloses whether implementation of the proposed Project would increase health risks for people living, working, or attending school near LAX.

4.1.2.2 Methodology

The methodology for the HHRA was documented in a human health risk assessment protocol that was presented to, and reviewed by, the South Coast Air Quality Management District (SCAQMD) prior to the initiation of the HHRA.[1] This methodology is described below, with supporting information provided in **Appendix C.6** and **Appendix C.8**.

4.1.2.2.1 TAC Emissions and Concentrations

The analysis uses estimates of the TAC emissions and concentrations in air in order to calculate cancer risk and chronic and acute non-cancer health hazards. TAC concentrations are estimated from a dispersion model using estimated emission rates, meteorological data, and geographic information as inputs.

Project-related concentrations of TAC from construction and operational sources were estimated using model options of 1-hour maximum, 8-hour maximum, and annual average concentrations. Key modeling and analytical parameters included the following:

[1] CDM Smith, *Los Angeles International Airport – Airfield and Terminal Modernization Project, Final Supplement 1 – Human Health Risk Assessment Methodology to the CEQA Protocol for Conducting an Air Quality Impact Analysis of Criteria Air Pollutants*, March 16, 2020. This protocol is included as **Appendix C.8** of this EIR.

- Baseline conditions were modeled by using 2018 operations data and applying typical emissions rates for aircraft, vehicles, and stationary sources.
- Construction-related TAC emissions were modeled for each year of construction using the schedule for proposed Project construction activities and typical emissions factors for construction equipment and activities. Year-by-year emissions estimates were used to account for changes in both location and types of activities anticipated to occur as Project construction progresses. In addition, indirect construction emissions caused by construction-related incremental aircraft taxiing and idling delays during the temporary closure of the north airfield runways were also included in TAC emissions and dispersion analyses.
- Proposed Project operations were modeled for conditions in 2028.

Additional information on how emissions and concentrations were developed, and which reference documents and information were used, is summarized in the LAX Airfield and Terminal Modernization Project CEQA Protocol for Conducting an Air Quality Impact Analysis for Criteria Air Pollutants in Appendix C,[2] Supplement 1 – Human Health Risk Assessment Methodology to the CEQA Protocol,[3] and the methodology discussion in Section 4.1.1, *Air Quality*, of this EIR.

The potential incremental impacts were determined by comparing the estimated emissions in 2028 to the emissions in the 2018 baseline conditions. The difference between these two conditions was used to determine incremental Project-related emissions in 2028.[4] Incremental short-term 1-hour concentrations were used to estimate acute non-cancer health hazard impacts. Incremental annual average concentrations were used to estimate cancer risk and chronic non-cancer health hazards.

California Environmental Protection Agency (CalEPA) guidance[5] requires that impacts to health be evaluated for a 30-year exposure duration. Based on Project construction starting in 2021, the HHRA for cancer risks covered a time period that extends to 2050.

In order to remove the influence of background growth and the differences in motor vehicle emission factors between 2018 and 2028, a comparison between concentrations from the proposed Project in 2028 and concentrations from the Future Without Project scenario in 2028 is provided. The difference between these two scenarios highlights the air pollutant concentration impacts of the proposed Project compared to future concentrations that are projected to occur without the Project. This comparison is made for informational purposes only and the significance of the Project impacts is not based on this comparison.

4.1.2.2.2 Exposure Locations

TAC concentrations were estimated at various receptor locations within the study area, including adjacent to the LAX property line, the CTA, and communities around LAX. In addition, several on-airport locations that were not within the Project site, and locations near possible Project construction sites were also selected. These locations were selected in accordance with CalEPA Office of Environmental Health Hazard Assessment (OEHHA) guidance for conducting an HHRA. The modeled concentrations at these locations were used to estimate the incremental human health risks and hazards and to determine the level of significance.

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2 CDM Smith, *Los Angeles International Airport – Airfield and Terminal Modernization Project, Final CEQA Protocol for Conducting an Air Quality Impact Analysis of Criteria Air Pollutants*, June 4, 2020. This protocol is included as **Appendix C.8** of this EIR.

3 CDM Smith, *Los Angeles International Airport – Airfield and Terminal Modernization Project, Final Supplement 1 – Human Health Risk Assessment Methodology to the CEQA Protocol for Conducting an Air Quality Impact Analysis of Criteria Air Pollutants*, March 16, 2020. This protocol is included as **Appendix C.8** of this EIR.

4 Operational baseline conditions are 2018 existing operational conditions. Because no Project-related construction occurred in 2018, the construction baseline condition is zero emissions.

5 South Coast Air Quality Management District, *AB 2588 and Rule 1402 Supplemental Guidelines (Supplemental Guidelines for Preparing Risk Assessments for the Air Toxics "Hot Spots" Information and Assessment Act)*, July 2018. Available: http://www.aqmd.gov/docs/default-source/planning/risk-assessment/ab2588supplementalguidelines.pdf.

4.1.2.2.3 Overview of Risk Assessment

This HHRA followed State and federal guidance for performance of risk assessments and was conducted using the four steps defined in SCAQMD, CalEPA, and United States Environmental Protection Agency (USEPA) guidance.[6,7,8] These four steps, summarized in the following sections, consist of: selection of TAC of concern, exposure assessment, toxicity assessment, and risk characterization. Following OEHHA guidance, the equations and calculations from the Hot Spots Analysis and Reporting Program Version 2 (HARP2) model, developed by the California Air Resources Board (CARB), were built into an Excel spreadsheet to calculate and present health risk assessment results. This approach allowed for customization of the calculations to address Project-specific criteria. Additional details of the risk assessment methodology are provided in the HHRA protocol.[9]

4.1.2.2.3.1 Selection of TAC of Concern

California Assembly Bill 2588 (AB 2588) identifies TAC for which OEHHA has developed cancer slope factors and chronic and/or acute reference exposure levels (RELs)[10] Cancer slope factors define the relationship between inhalation of TAC and risk of developing cancer. RELs define the relationship between inhalation of TAC and subsequent non-cancer health impacts. REL levels are separately identified for both long- and short-term exposure durations. RELs are based on the most sensitive, relevant, adverse health effect reported in the medical and toxicological literature. Since margins of safety are incorporated to address data gaps and uncertainties, exceeding an REL does not automatically indicate an adverse health impact.[11] For this analysis, TAC of concern were derived based on the AB 2588 list, emissions estimates, human toxicity information, and results of previous HHRAs conducted for LAX.[12] The

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6 South Coast Air Quality Management District, *AB 2588 and Rule 1402 Supplemental Guidelines (Supplemental Guidelines for Preparing Risk Assessments for the Air Toxics "Hot Spots" Information and Assessment Act)*, July 2018. Available: http://www.aqmd.gov/docs/default-source/planning/risk-assessment/ab2588supplementalguidelines.pdf.

7 California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, *Air Toxics Hot Spots Program Risk Assessment Guidelines, Part I: The Determination of Acute Reference Exposure Levels for Airborne Toxicants*, March 1999. Available: https://oehha.ca.gov/air/crnr/adoption-air-toxics-hot-spots-risk-assessment-guidelines-part-i-technical-support-document; California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, *Air Toxics Hot Spots Program Risk Assessment Guidelines, Technical Support Document for Cancer Potency Factors: Methodologies for derivation, listing of available values, and adjustments to allow early life stage exposures,* May 2009. Available: https://oehha.ca.gov/media/downloads/crnr/tsdcancerpotency.pdf; California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, *Air Toxics Hot Spots Program Risk Assessment Guidelines, Technical Support Document for the Derivation of Noncancer Reference Exposure Levels*, June 2008. Available: https://oehha.ca.gov/media/downloads/crnr/noncancertsdfinal.pdf; California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, *Air Toxic Hot Spots Program Risk Assessment Guidelines, Technical Support Document for Exposure Assessment and Stochastic Analysis*, August 2012. Available: https://oehha.ca.gov/air/crnr/notice-adoption-technical-support-document-exposure-assessment-and-stochastic-analysis-aug; California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, *Air Toxics Hot Spots Program, Risk Assessment Guidelines, Guidance Manual for Preparation of Health Risk Assessments*, February 2015. Available: https://oehha.ca.gov/air/crnr/notice-adoption-air-toxics-hot-spots-program-guidance-manual-preparation-health-risk-0.

8 U.S. Environmental Protection Agency, Office of Emergency and Remedial Response, *Risk Assessment Guidance for Superfund, Vol. I, Human Health Evaluation Manual (Part A), Interim Final*, EPA/540/1-89/002, December 1989. Available: https://www.epa.gov/sites/production/files/2015-09/documents/rags_a.pdf.

9 CDM Smith, *Los Angeles International Airport – Airfield and Terminal Modernization Project, Final, Supplement 1 – Human Health Risk Assessment Methodology to the CEQA Protocol for Conducting an Air Quality Impact Analysis of Criteria Air Pollutants*, March 16, 2020. This protocol is included as **Appendix C.8** of this EIR.

10 California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, *Toxicity Criteria Online Database.* Available: https://oehha.ca.gov/chemicals, accessed January 15, 2020.

11 Margin of safety is a ratio of the no-observed-effect level to the estimated exposure dose. Margins of safety are incorporated in the development of toxicity values to account for differences in dose-response among individuals. For example, the same dose of alcohol may have a greater effect on a woman than a man, not only because a woman is smaller in body size but also because men and women metabolize alcohol at different rates.

12 City of Los Angeles, Los Angeles World Airports, *Final Environmental Impact Report for Los Angeles International Airport (LAX) Proposed Master Plan Improvements,* (SCH 1997061047), Section 4.24.1, Human Health Risk Assessment, Technical Report 14a, Health Risk Assessment, and Technical Report S-9a, Supplemental Health Risk Assessment, April 2004. Available: https://www.lawa.org/en/lawa-our-lax/environmental-documents/documents-certified/2004-lax-master-plan-program/final-environmental-impact-report-feir.

list of TAC of concern evaluated in this HHRA, and their primary emission source, is provided in **Table 4.1.2-1**.

Table 4.1.2-1
Toxic Air Contaminants (TAC) of Concern for the Proposed Project

Toxic Air Contaminant	Type	Primary Source
Acetaldehyde	VOC	Diesel Exhaust
Acrolein	VOC	Aircraft Exhaust
Benzene	VOC	Gasoline Exhaust
1,3-Butadiene	VOC	Aircraft Exhaust
Ethylbenzene	VOC	Gasoline Exhaust
Cyclohexane	VOC	Diesel and Gasoline Exhaust
Formaldehyde	VOC	Aircraft and Diesel Exhaust
n-Hexane	VOC	Diesel and Gasoline Exhaust
Isoprene	VOC	Gasoline Exhaust
Isopropylbenzene (Cumene)	VOC	Aircraft, Diesel, and Gasoline Exhaust
Methyl alcohol	VOC	Aircraft Exhaust
Methyl ethyl ketone	VOC	Diesel Exhaust
Propionaldehyde	VOC	Aircraft, Diesel, and Gasoline Exhaust
Propylene	VOC	Aircraft, Gasoline, and Diesel Exhaust
Styrene	VOC	Aircraft and Gasoline Exhaust
Toluene	VOC	Gasoline Exhaust
1,2,4-Trimethylbenzene	VOC	Aircraft, Diesel and Gasoline Exhaust
2,2,4-Trimethylpentane	VOC	Diesel and Gasoline Exhaust
Xylene (total)	VOC	Gasoline Exhaust
Naphthalene	PAH	Gasoline Exhaust
Aluminum	PM-Metal	Brake Wear, Tire Wear, and Construction Dust
Antimony	PM-Metal	Construction Dust
Arsenic	PM-Metal	Construction Dust
Barium	PM-Metal	Aircraft Exhaust, Brake Wear, Tire Wear, and Construction Dust
Cadmium	PM-Metal	Construction Dust and Diesel Exhaust
Chromium VI	PM-Metal	Aircraft Exhaust and Brake Wear
Cobalt	PM-Metal	Gasoline Exhaust and Construction Dust
Copper	PM-Metal	Brake Wear
Lead	PM-Metal	Construction Dust
Manganese	PM-Metal	Aircraft Exhaust, Brake Wear, and Construction Dust
Mercury	PM-Metal	Construction Dust and Diesel Exhaust
Nickel	PM-Metal	Brake Wear and Gasoline Exhaust
Selenium	PM-Metal	Brake Wear and Tire Wear
Silver	PM-Metal	Construction Dust
Vanadium	PM-Metal	Brake Wear and Construction Dust
Zinc	PM-Metal	Brake Wear, Tire Wear, Gasoline Exhaust, and Construction Dust
Diesel PM	Diesel Exhaust	Diesel Exhaust
Ammonium ion	PM-Inorganics	Brake Wear, Tire Wear, and Construction Dust
Bromine	PM-Inorganics	Brake Wear, Tire Wear, Gasoline Exhaust, and Construction Dust

Table 4.1.2-1
Toxic Air Contaminants (TAC) of Concern for the Proposed Project

Toxic Air Contaminant	Type	Primary Source
Chlorine	PM-Inorganics	Gasoline Exhaust
Phosphorus	PM-Inorganics	Tire Wear and Construction Dust
Silicon	PM-Inorganics	Construction Dust
Sulfates	PM-Inorganics	Brake Wear and Diesel Exhaust

Source: CDM Smith January 2020.

Key:
PAH = Polycyclic aromatic hydrocarbons; PM = Particulate matter; VOC = Volatile organic compounds

4.1.2.2.3.2 Exposure Assessment

The following sensitive receptors were selected for quantitative evaluation: on-airport workers, off-airport workers, and community receptors including adult residents, child residents, and school children. These receptors were selected because they represent unique populations and a range of exposure conditions (i.e., location and duration of exposure). In addition, these receptors would be subject to the highest exposures, allowing for assessment of the risks and hazards to Maximally Exposed Individuals (MEI), which is required to evaluate the level of significance. In addition to identifying the MEIs, the locations of receptors need to be far enough out so that the locations where impacts drop below the level of significance can be determined.

To assess a receptor's exposure to TAC, the various exposure pathways must be considered.

An exposure pathway consists of four parts:

- A TAC source (e.g., construction equipment fuel combustion)
- A release mechanism (e.g., construction equipment engine exhaust)
- A means of transport from point of release to point of exposure (e.g., local winds)
- A route of exposure (e.g., inhalation)

If any of these elements of an exposure pathway is absent, no exposure can take place and the pathway is considered incomplete. Incomplete pathways were not evaluated in this HHRA.

In the programmatic HHRA developed for the LAX Master Plan EIR,[13] multiple exposure pathways, including uptake from soil into homegrown vegetables, transport of TAC in soil to indoor dust and/or surface water, and other indirect pathways, were addressed quantitatively. These analyses showed that inhalation was the only exposure pathway that was an important contributor to human health risk. Based on this previous analysis, inhalation of airport-related TAC was the only exposure pathway used to evaluate human health risk for the proposed Project.

4.1.2.2.3.3 Toxicity Assessment

A toxicity assessment for TAC of concern was conducted for the LAX Master Plan Final EIR.[14] Cancer risks and chronic non-cancer health hazards associated with longer-term inhalation of emissions from

[13] City of Los Angeles, Los Angeles World Airports, *Final Environmental Impact Report for Los Angeles International Airport (LAX) Proposed Master Plan Improvements,* (SCH 1997061047), Technical Report 14a, Health Risk Assessment, and Technical Report S-9a, Supplemental Health Risk Assessment, April 2004. Available: https://www.lawa.org/en/lawa-our-lax/environmental-documents/documents-certified/2004-lax-master-plan-program/final-environmental-impact-report-feir.

[14] City of Los Angeles, Los Angeles World Airports, *Final Environmental Impact Report for Los Angeles International Airport (LAX) Proposed Master Plan Improvements,* (SCH 1997061047), Technical Report 14a, Health Risk Assessment, and Technical Report S-9a, Supplemental Health Risk Assessment, April 2004. Available: https://www.lawa.org/en/lawa-our-lax/environmental-documents/documents-certified/2004-lax-master-plan-program/final-environmental-impact-report-feir.

construction and operational activities were characterized using cancer slope factors and chronic RELs developed by the State of California.[15] Tables of the toxicity values used in the HHRA calculations are provided in **Appendix C.6**.

Acute RELs developed by the State of California were used in the characterization of acute non-cancer health hazards associated with the proposed Project. These RELS were used to characterize short-term exposure (usually exposures on the order of 1 hour or 8 hours). Acute RELs are applicable to all receptors, including both children and adults. Hazards are the ratio of estimated or measured concentrations and the REL.

4.1.2.2.3.4 Risk Characterization

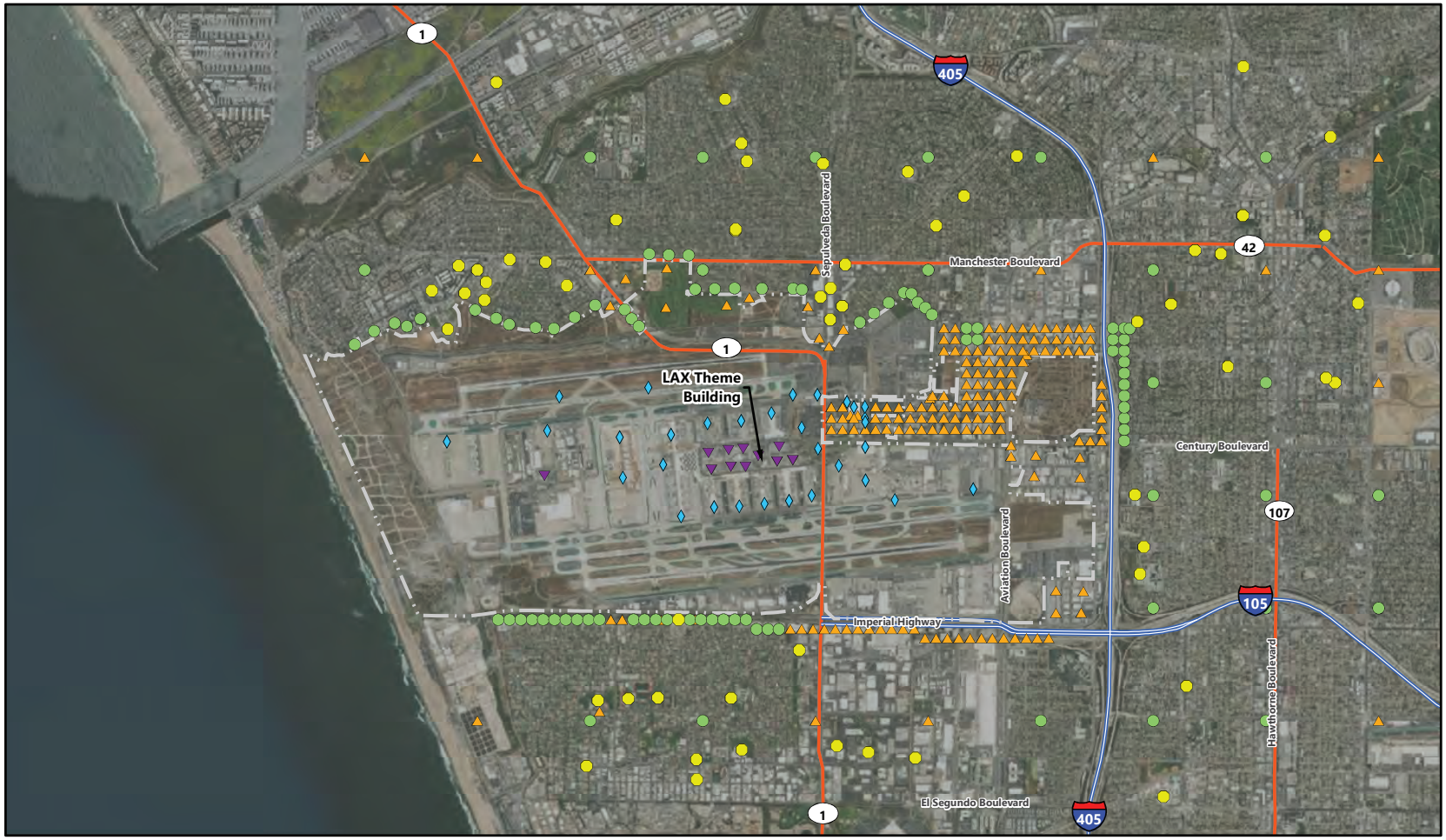
Consistent with OEHHA guidance,[16] the assessment of chronic human health impacts due to release of airport-related TAC from the proposed Project was based on the following time frames for receptor exposure: 9- and 30- year periods for child and adult residential receptors, respectively; 12-year period for school children; and a 25-year period for off-airport workers.

During construction, the location and magnitude of TAC emissions would depend on the level of activity, types of equipment used, and the phase of the work. To incorporate this variability into the model, construction emissions were modeled separately for each year of construction. The total risks to each receptor were calculated as the sum of cancer risks from each individual year. Risks associated with operations were modeled for the 2028 build-out year. The total risks to each receptor were calculated as the sum of cancer risks over their exposure periods to these operations.

The risk characterization results in estimates of MEIs, which are land use specific. On-airport locations were used to identify commercial and on-airport worker TAC concentrations for operational emissions. For off-airport locations, land uses were designated as residential, commercial, or residential/commercial and then evaluated to identify appropriate receptor types for the designated land use (i.e., workers at commercial locations or adults and children at residential locations). In addition, locations of schools, hospitals, nursing homes, and day care facilities were identified as sensitive receptor locations and designated as residential/commercial so that these locations would be evaluated for both worker and residential receptors. The modeled receptor locations are shown on **Figure 4.1.2-1**. These locations were initially selected to capture areas most likely impacted by the proposed Project based on locations of on-airport and off-airport improvements.

[15] California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, *Toxicity Criteria Online Database*. Available: https://oehha.ca.gov/chemicals, accessed January 15, 2020.

[16] California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, *Air Toxics Hot Spots Program, Risk Assessment Guidelines, Guidance Manual for Preparation of Health Risk Assessments*, February 2015. Available: https://oehha.ca.gov/air/crnr/notice-adoption-air-toxics-hot-spots-program-guidance-manual-preparation-health-risk-0.



Legend

- LAX Property Boundary
- Commercial
- On-Airport Commercial
- On-Airport Construction, Commercial
- Residential
- Residential/Commercial
- Interstate Highway
- California State Highway

Notes:

1. Grid points indicate locations where receptors were evaluated for the construction and operations scenarios. Receptor types are identified in the legend.
2. Beause future schools could be sited in any area zoned as residential, school child receptors were evaluated at all residential grid nodes.

0 0.5 1 Miles
Scale

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, August 2020
Prepared by: CDM Smith, October 2020

LAX Airfield and Terminal Modernization Project	Construction and Operations Grid Point Locations	Figure **4.1.2-1**

Methodology for Evaluating Cancer Risks

Cancer risks were estimated by multiplying exposure estimates for carcinogenic chemicals by corresponding cancer slope factors. The result is a risk estimate expressed as the probability of developing cancer. As noted above, consistent with OEHHA guidance,[17] cancer risks were based on exposure durations of 30 years for adult residents, 9 years for child residents, 12 years for school children, and 25 years for off-airport workers. The methodology is conservative, as it assumes individuals would be exposed to TAC for almost every hour of each day of the receptor's respective exposure duration. For each receptor's years of exposure after construction, the increment of future operational risk over the 2018 baseline operational risk was added to the risk calculated for the construction period. Impacts of exposure to multiple TAC were accounted for by summing cancer risk estimates for exposure to each individual TAC.

Methodology for Evaluating Chronic Non-Cancer Health Hazards

Chronic non-cancer health hazard estimates were calculated by dividing exposure estimates by RELs. In the context of non-cancer health hazards, RELs are estimates of the highest exposure levels that would not cause adverse chronic health effects even if exposures continue over a lifetime. The ratio of exposure concentration to reference concentration is termed the "hazard quotient" (HQ). A HQ greater than 1 indicates the potential for adverse health effects and a HQ less than 1 indicates that adverse health effects are unlikely. RELs are developed by OEHHA and account for the most vulnerable members of a population. Therefore, it is generally accepted that HQs only slightly higher than 1 are associated with low or no risks of adverse effects and the potential for adverse effects increases as the HQ gets larger.[18]

Exposure to multiple TAC with the potential to cause adverse chronic non-cancer health effects were accounted for by summing HQs for chemicals that would affect like target organs or tissues in the human body. This sum is the total chronic Hazard Index (HI) which reflects the total possible chronic non-cancer health hazard increment. Although inhalation is the only pathway determined to have an important contribution to risk, exposure to TAC through inhalation has the potential to affect multiple organ systems. Therefore, the combined risk for each target organ system was evaluated for exposure to TAC associated with the proposed Project.

Methodology for Evaluating Acute Non-Cancer Health Hazards

Short-term concentrations for TAC associated with construction of the proposed Project were estimated by modeling 1-hour maximum concentrations. Acute non-cancer health hazards were then estimated at each receptor location by dividing estimated maximum 1-hour TAC concentrations in air by acute RELs to determine the HQ.

Exposure to multiple TAC with the potential to cause adverse acute non-cancer health effects were accounted for by summing HQs for chemicals that would affect like target organs or tissues in the human body. This sum is the total acute HI, which reflects the total possible acute non-cancer health hazard increment.

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[17] California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, *Air Toxics Hot Spots Program, Risk Assessment Guidelines, Guidance Manual for Preparation of Health Risk Assessments*, February 2015. Available: https://oehha.ca.gov/air/crnr/notice-adoption-air-toxics-hot-spots-program-guidance-manual-preparation-health-risk-0.

[18] California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, *Air Toxics Hot Spots Program, Risk Assessment Guidelines, Guidance Manual for Preparation of Health Risk Assessments*, February 2015. Available: https://oehha.ca.gov/air/crnr/notice-adoption-air-toxics-hot-spots-program-guidance-manual-preparation-health-risk-0.

Methodology for Evaluating Occupational Health Hazards

Impacts to on-airport workers were evaluated based on California Division of Occupational Safety and Health (CalOSHA) Permissible Exposure Limits (PELs).[19] PELs are established to protect on-site workers from hazardous exposure. For each TAC of concern for which CalOSHA PEL thresholds have been established, the maximum 8-hour modeled concentration was compared against the corresponding CalOSHA PEL.

Methodology for Evaluating Population-Based Risks

When MEI risks exceed threshold levels, CalEPA guidance indicates that population-based risks should be evaluated.[20] A population-based assessment estimates the cancer burden that might be experienced within an exposed population. The cancer burden is the sum of individual risks for people living in the study area. It is calculated in a manner similar to individual cancer risk based on an exposure period ranging from the third trimester to age 70 and corresponding age sensitivity factors and exposure parameters. Population-based risk conservatively assumes that a population (not necessarily the same individuals) will live within the study area over a 70-year lifetime period. In this sense, cancer burden calculations are more conservative than individual cancer risks, which are calculated assuming an exposure duration of 30 years.

For the proposed Project, the population based risk was calculated by utilizing census population counts for census tracts within the 1 in 1 million maximally exposed individual resident (MEIR) exposure area and multiplying the identified population counts by the average individual 70-year burden risk modeled for the tract. For example, if 100,000 people live in an area that experiences an increased cancer risk of 10 in 1 million due to airport emissions, the chance of a single case of cancer in this population caused by airport emissions would be 1 in 100 (100,000 times 10 x 10^{-6}). In cases where a single census block may contain more than one modeled receptor point, the average of the calculated risks for the points was used for the calculation. The sum of population-based risks in all modeled census tracts represented the total cancer burden associated with Project impacts.

Methodology for Evaluating Cumulative Impacts

Cumulative impacts of emissions on health risks were based on studies conducted by governmental agencies. Specifically, the evaluation of cumulative cancer risks was based on the most recent Multiple Air Toxics Exposure Study, MATES-IV, prepared by SCAQMD.[21] Data presented in USEPA's National Air Toxics Assessment[22] were used to evaluate cumulative chronic non-cancer health hazards. For cumulative acute non-cancer health hazards, conservative approximations of short-term concentrations were made using generic conversion factors and the annual average estimates of TAC in air from USEPA, which were used to provide a semi-quantitative evaluation of the possible range of cumulative impacts.

Uncertainties

Uncertainties are unavoidable in an HHRA. For this analysis, these include uncertainties associated with emission estimates and dispersion modeling, evaluation of sensitive receptor populations, exposure parameter assumptions, toxicity assessment, the assumptions inherent in the 2015 OEHHA Air Toxics

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[19] California Occupational Safety and Health Administration, *Table AC-1, Permissible Exposure Limits for Chemical Contaminants*. Available: https://www.dir.ca.gov/title8/5155table_ac1.html, accessed December 20, 2019.

[20] California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, *Air Toxics Hot Spots Program, Risk Assessment Guidelines, Guidance Manual for Preparation of Health Risk Assessments,* February 2015. Available: https://oehha.ca.gov/air/crnr/notice-adoption-air-toxics-hot-spots-program-guidance-manual-preparation-health-risk-0.

[21] South Coast Air Quality Management District, *Final Report – Multiple Air Toxics Exposure Study in the South Coast Air Basin – MATES-IV*, May 2015. Available: http://www.aqmd.gov/docs/default-source/air-quality/air-toxic-studies/mates-iv/mates-iv-final-draft-report-4-1-15.pdf?sfvrsn=7.

[22] U.S. Environmental Protection Agency, *2014 National Air Toxics Assessment*, 2018. Available: https://www.epa.gov/national-air-toxics-assessment/2014-nata-assessment-results, accessed February 5, 2020.

Methodology, and interactions among acrolein and criteria pollutants.[23] Detailed discussions of these uncertainties associated with the HHRA are presented in **Appendix C.6**. The approach used in this EIR health impact analysis follows accepted regulatory guidance and uses conservative (i.e., health protective) assumptions and methods to account for multiple uncertainties.

4.1.2.3 Existing Conditions

4.1.2.3.1 Regulatory Setting

4.1.2.3.1.1 Federal

The USEPA provides guidance on performing HHRAs for certain purposes through its Office of Emergency and Remedial Response.[24] The FAA does not prepare or use HHRAs in the airport context.

4.1.2.3.1.2 State

CARB's statewide comprehensive air toxics program was established in the early 1980s. The Toxic Air Contaminant Identification and Control Act (AB 1807) created California's program to reduce exposure to air toxics.

In September 1987, the California Legislature established the AB 2588 air toxics "Hot Spots" program. It requires facilities to report their air toxics emissions, ascertain health risks, and notify nearby residents of significant risks. In September 1992, the "Hot Spots" Act was amended by Senate Bill 1731, which required facilities that pose a significant health risk to the community to reduce their risk through a risk management plan. Beginning in 2000, CARB has adopted diesel risk reduction plans and measures to reduce diesel particulate matter (DPM) emissions and their associated health risk. These are discussed in more detail below.

In 2004, CARB adopted a control measure to limit commercial heavy-duty diesel motor vehicle idling in order to reduce public exposure to DPM and other TAC. The measure applies to diesel-fueled commercial vehicles with gross vehicle weight ratings greater than 10,000 pounds that are licensed to operate on highways, regardless of where they are registered. In general, it prohibits idling for more than 5 minutes at any location.

In addition to limiting exhaust from idling trucks, CARB promulgated emission standards for off-road diesel construction equipment such as bulldozers, loaders, backhoes, and forklifts, as well as many other self-propelled off-road diesel vehicles. A CARB regulation that became effective on June 15, 2008 aims to reduce emissions by requiring installation of diesel soot filters and encouraging the replacement of older, dirtier engines with newer, emission-controlled models. The regulation requires that fleets limit their unnecessary idling to 5 minutes; there are exceptions for vehicles that need to idle to perform work (such as a crane providing hydraulic power to a boom), vehicles being serviced, or in a queue waiting for work. A prohibition against acquiring certain vehicles (e.g., Tier 0 and Tier 1) began on March 1, 2009. Implementation of the fleet averaging emission standards is staggered based on fleet size, with the largest operators required to begin compliance in 2014.[25] CARB has estimated that, with these regulations, DPM

[23] California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, *Air Toxics Hot Spots Program, Risk Assessment Guidelines, Guidance Manual for Preparation of Health Risk Assessments*, February 2015. Available: https://oehha.ca.gov/air/crnr/notice-adoption-air-toxics-hot-spots-program-guidance-manual-preparation-health-risk-0.

[24] U.S. Environmental Protection Agency, Office of Emergency and Remedial Response, *Risk Assessment Guidance for Superfund, Vol I, Human Health Evaluation Manual (Part A), Interim Final*, EPA/540/1-89/002, December 1989. Available: https://www.epa.gov/sites/production/files/2015-09/documents/rags_a.pdf.

[25] California Air Resources Board, *In-Use Off-Road Diesel Vehicle Regulation, Overview*, Revised October 2016. Available: https://www.arb.ca.gov/msprog/ordiesel/faq/overview_fact_sheet_dec_2010-final.pdf.

will have been reduced by 74 percent and NO_X (an ozone precursor emitted from diesel engines) by 32 percent by 2020, compared to what emissions would have been without the regulation.[26]

CalEPA provides guidance on performing an HHRA through its OEHHA publications:

- Air Toxics Hot Spots Program Risk Assessment Guidelines, Part I: The Determination of Acute Reference Exposure Levels for Airborne Toxicants, March 1999
- Air Toxics Hot Spots Program Risk Assessment Guidelines, Technical Support Document for Cancer Potency Factors, May 2009
- Air Toxics Hot Spots Program Risk Assessment Guidelines, Technical Support Document for the Derivation of Noncancer Reference Exposure Levels, June 2008
- Air Toxic Hot Spots Program Risk Assessment Guidelines, Technical Support Document for Exposure Assessment and Stochastic Analysis, August 2012
- Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments, February 2015

LAWA has adhered to this guidance in preparing this analysis.

4.1.2.3.1.3 Regional/Local

SCAQMD has jurisdiction over the air quality of the South Coast Air Basin. SCAQMD adopted a significance criterion for cancer health risks of a 10 in 1 million increase in the chance of developing cancer. SCAQMD also adopted a significance criterion for cancer burden. SCAQMD's adopted significance criterion for cancer burden is greater than 0.5 excess cancer cases in areas with an incremental increase in cancer risk greater than or equal to 1 in 1 million. The significance of non-cancer (acute and chronic) risks is evaluated in terms of HIs for different endpoints. SCAQMD's threshold for non–cancer risk for both acute and chronic HI is 1.0.[27]

4.1.2.3.2 Environmental Setting

In June 1987, the SCAQMD published the first MATES, which was the most comprehensive air toxics study ever conducted in an urban environment. This original study has been updated several times; the most recent study, MATES-IV, was published in May 2015.[28] MATES-IV estimates cancer risk from TAC emissions throughout the South Coast Air Basin by conducting a comprehensive monitoring program, an updated emissions inventory of TAC, and a modeling effort to fully characterize health risks for those living in the South Coast Air Basin. The study includes a series of maps showing regional trends in estimated outdoor inhalation cancer risk from toxic emissions. These risk maps depict inhalation cancer risk due to modeled outdoor TAC pollutant levels, and do not account for cancer risk due to other types of exposure. The study found that the largest contributors to inhalation cancer risk are diesel engines. According to MATES-IV, cancer risks in the South Coast Air Basin range from 320 in 1 million to 480 in 1 million, with an average of 418 in 1 million. These cancer risk estimates are relatively high (although substantially lower than those found in MATES-III) and indicate that current impacts associated with ongoing releases of TAC (e.g., from vehicle exhaust), and from sources of TAC from past and present projects in the region, are substantial.

As part of the MATES-III Study, the SCAQMD prepared a series of maps that show regional trends in estimated outdoor inhalation cancer risk from toxic emissions, as part of an ongoing effort to provide

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[26] California Air Resources Board, *Facts about Emissions and Health Benefits of Regulation for In-Use Off-Road Diesel Vehicles*, revised September 20, 2007. Available: http://www.arb.ca.gov/msprog/ordiesel/documents/OFRDDIESELhealthFS.pdf.

[27] South Coast Air Quality Management District, *South Coast AQMD Air Quality Significance Thresholds*, April 2019. Available: http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf?sfvrsn=2.

[28] South Coast Air Quality Management District, *Final Report – Multiple Air Toxics Exposure Study in the South Coast Air Basin – MATES-IV*, May 2015. Available: http://www.aqmd.gov/docs/default-source/air-quality/air-toxic-studies/mates-iv/mates-iv-final-draft-report-4-1-15.pdf?sfvrsn=7.

insight into relative risks. The maps' estimates represent the number of potential cancers per million people associated with a lifetime of breathing air toxics (24 hours per day outdoors for 70 years) in parts of the South Coast Air Basin. The estimated lifetime cancer risk from exposure to TAC for those residing within the vicinity of the proposed Project is 884 cancers per million, while the vast majority of the area surrounding LAX ranges between 500 to 1,200 cancers per million.[29] However, the visual resolution available in the map is 1 kilometer by 1 kilometer and, thus, impacts for individual neighborhoods are not discernible on this map. In general, the risk at the Project site is comparable with other areas in the Los Angeles area; the risk from air toxics is lower near the coastline, and increases inland, with higher risks concentrated near large diesel sources (e.g., freeways, airports, and ports).

SCAQMD also provides guidance on performing an HHRA through its publication, *Supplemental Guidelines for Preparing Risk Assessment for the Air Toxics Hot Spots Information and Assessment Act*.[30] This guidance incorporates the updated risk methodologies established by OEHHA's 2015 Guidance Manual that take into account early childhood exposure. According to MATES-IV, while generally there has been an overall South Coast Air Basin-wide reduction in air toxics concentrations since MATES-III, application of the updated risk estimation methods adopted by OEHHA in 2015 results in an estimated population-weighted risk across the South Coast Air Basin of 897 per million, an increase in cancer risks.

CARB also prepares a series of maps that show regional trends in estimated outdoor inhalable cancer risk from air toxic emissions. The Year 2010 Los Angeles County Central map, which is the most recently available map to represent existing conditions, shows cancer risk ranging from 500 to 1,500 cancers per million in the Project area, which is generally consistent with the SCAQMD's risk maps.[31]

The data from the SCAQMD and CARB provide a slightly different range of risk. This difference is primarily related to the fact that the SCAQMD risk is based on monitored pollutant concentrations and the CARB risk is based on dispersion modeling and emission inventories. Regardless, the SCAQMD and CARB data show that an inherent health risk associated with living in urbanized areas of the South Coast Air Basin, where mobile sources (e.g., cars, trucks, trains, ships, aircraft, etc.) represent the greatest contributors to the overall risk.

4.1.2.3.2.1 Sources of Toxic Air Contaminants of Concern

Baseline sources of TAC at LAX, which would be affected by the proposed Project, include both stationary and mobile sources. Stationary sources consist of equipment such as water heaters, space heaters, and emergency generators. Mobile sources of TAC include aircraft, auxiliary power units, GSE, and on- and off-airport vehicles. These sources generate a number of TAC of concern, including volatile organics, polycyclic aromatic hydrocarbons, metals, and other constituents. During construction, there would be no stationary sources of TAC; construction-related mobile sources of TAC would consist of construction dust, heavy-duty construction equipment, and on- and off-airport vehicles.

4.1.2.3.2.2 Exposed Populations

Screening-level air dispersion modeling conducted for the LAX Master Plan Final EIR indicated that the greatest area of human health risk from airport activities is confined to the airport property. However, health risks from LAX may affect populations in the nearby area. The exposed population within nearby areas includes workers, residents, and sensitive receptors such as schools, hospitals, and nursing facilities.

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[29] South Coast Air Quality Management District, *Multiple Air Toxics Exposure Study III Model Estimated Carcinogenic Risk.* Available: http://www3.aqmd.gov/webappl/matesiii/, accessed August 11, 2016.

[30] South Coast Air Quality Management District, *AB 2588 and Rule 1402 Supplemental Guidelines (Supplemental Guidelines for Preparing Risk Assessments for the Air Toxics "Hot Spots" Information and Assessment Act)*, July 2018. Available: http://www.aqmd.gov/docs/default-source/planning/risk-assessment/ab2588supplementalguidelines.pdf.

[31] California Air Resources Board, *Cancer Inhalation Risk: Local Trend Maps*. Available: http://www.arb.ca.gov/ch/communities/hlthrisk/cncrinhl/rskmapvwtrend.htm.400, accessed January 19, 2017.

The airport is bound to the north and south by residential areas that are likely to contain populations that are particularly sensitive to air pollution. These population groups include children, elderly, and acutely and chronically ill persons (especially those with cardio-respiratory diseases). Sensitive land uses in close proximity to the Project site include the following:

- The El Segundo residential neighborhood located approximately 1,300 feet to the south of Runway 7R-25L
- The Westchester residential neighborhood located approximately 1,300 feet to the north of Runway 6L-24R

4.1.2.4 Thresholds of Significance

LAWA has not adopted thresholds of significance for impacts to human health from TACs. LAWA generally relies on guidance issued by SCAQMD to determine the significance of such impacts. The thresholds listed below are based on SCAQMD guidance.[32] Thresholds for workers are based on standards developed by CalOSHA. No significance threshold specific to human health risk from exposure to TAC is included in Appendix G of the State CEQA Guidelines.

Significance determinations for health impacts are assessed as incremental increases or decreases in cancer risks and non-cancer health hazards. A significant[33] incremental impact to human health would occur if changes related to construction or operation of the proposed Project would result in:

Threshold 4.1.2-1 An increased incremental cancer risk greater than, or equal to, 10 in 1 million (10×10^{-6}) for potentially exposed off-airport workers, residents, or school children.[34]

Threshold 4.1.2-2 A cancer burden greater than, or equal to 0.5 excess cancer cases in areas within the greater than 1 in 1 million zone of impact.

Threshold 4.1.2-3 A total incremental chronic hazard index (HI) greater than, or equal to, 1 for any target organ system at any receptor location.[35]

Threshold 4.1.2-4 A total incremental acute HI greater than, or equal to, 1 for any target organ system at any receptor location.

Threshold 4.1.2-5 Exceedance of Permissible Exposure Limits - Time Weighted Average or Threshold Limit Values for workers.

4.1.2.5 Project Impacts

4.1.2.5.1 Impact 4.1.2-1

Summary Conclusion for Impact 4.1.2-1: The proposed Project would not increase incremental cancer risk greater than, or equal to, 10 in 1 million (10×10^{-6}) for potentially exposed off-airport workers, residents, or school children. This would be a *less than significant impact* for construction and operations.

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[32] South Coast Air Quality Management District, *South Coast AQMD Air Quality Significance Thresholds*, April 2019. Available: http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf?sfvrsn=2.

[33] The term "significant" is used as defined in CEQA and does not imply an independent judgment of the acceptability of risk or hazard.

[34] Incremental cancer risk is defined as the difference in cancer risks between the proposed Project and the 2018 baseline condition.

[35] For purposes of this analysis, a health hazard is any non-cancer adverse impact on health. (Cancer-related risks are addressed separately in this analysis.) A chronic health hazard is a hazard caused by repeated exposure to small amounts of a TAC. An acute health hazard is a hazard caused by a single or a few exposures to relatively large amounts of a chemical. A hazard index is the sum of ratios of estimated exposures to TAC and recognized safe exposures developed by regulatory agencies.

4.1.2.5.1.1 Construction

The MEI cancer risks associated with TAC exposure starting during construction and continuing through operations for the remainder of each receptor's exposure period are presented in **Table 4.1.2-2**. Supporting risk calculations are included in **Appendix C.6** for all receptors. As shown, construction-related cancer risks would be ***less than significant*** for off-airport workers, residents, and school children.

Table 4.1.2-2
Incremental Cancer Risks for Maximally Exposed Individuals during Combined With Project Construction and Operational Periods

Receptor Type	Cancer Risks[1,2,3,4] (per million people)	Threshold (per million people)	Equal to or Exceeds Threshold?
Off-Airport Worker, 25 years	5	10	No
Adult Resident, 70 years	-2	10	No
Adult Resident, 30 years	-1	10	No
Child Resident, 9 years	-0.1	10	No
School Child, 12 years	-0.2	10	No

Source: **Appendix C.6** of this EIR.

Notes:

1 Construction of the proposed Project is estimated to take 8 years – starting in 2021 and ending in 2028. Following construction, it was assumed that beginning in the 8th year (2028), construction and operations would be overlapping and continuing through the remainder of the receptors' exposure periods. Starting in 2028, receptors would be exposed to incremental 2028 With Project operations-related TAC as compared to 2018 baseline operations.

2 Maximally Exposed Individual (MEI) locations are shown on Figure 4.1.2-2.

3 The MEI value for the school child cancer risk is at a residential/commercial grid location and not at an existing school location. The highest estimated cancer risk for school children at an existing school is estimated to be -0.4 in 1 million at Cowan Avenue Elementary School (the school at grid point 176).

4 Negative values indicate a beneficial impact.

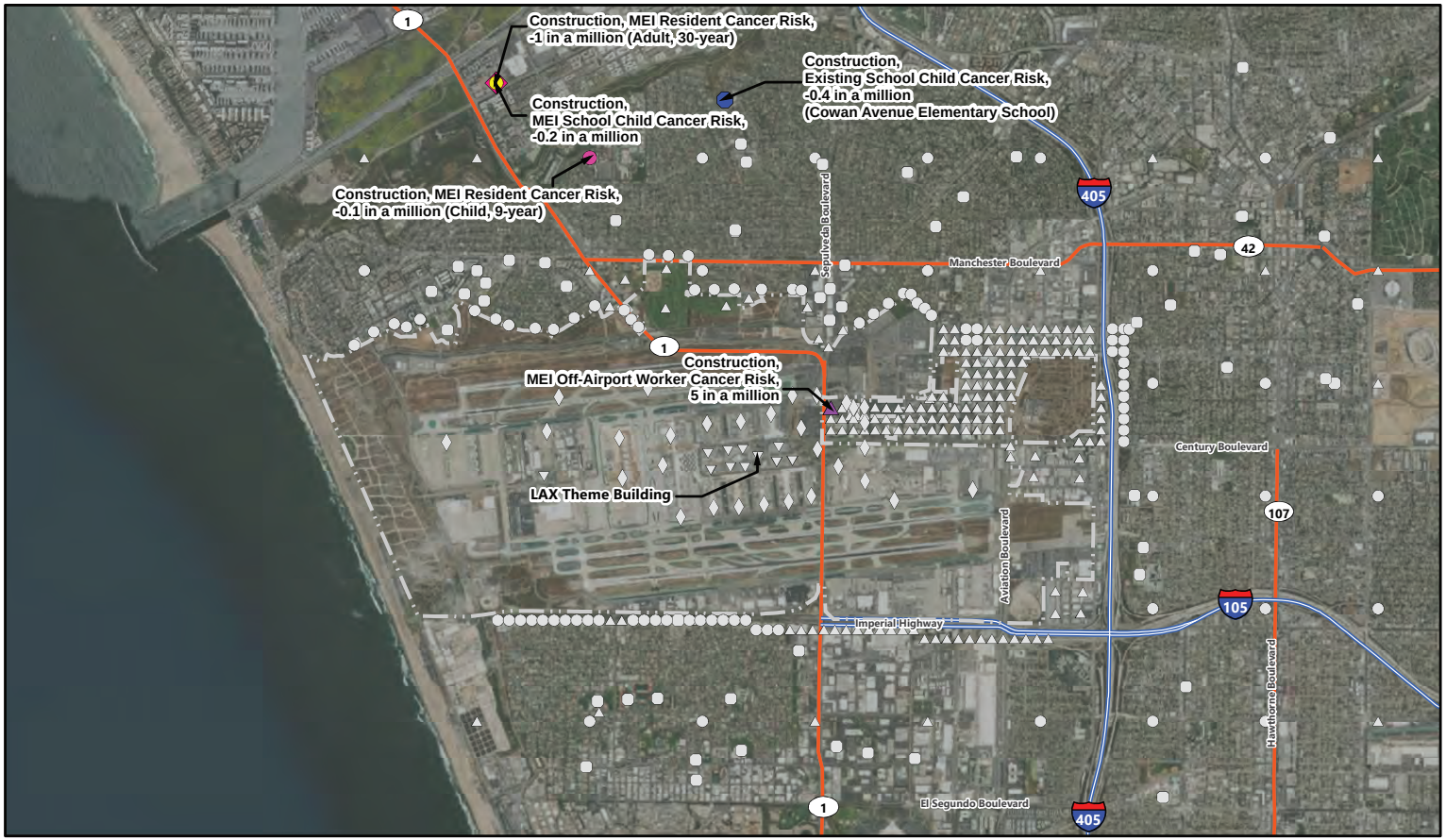
Off-Airport Workers

For the purposes of evaluating MEI cancer risk, off-airport workers were evaluated at 236 representative off-airport receptor locations identified as commercial or residential/commercial. Construction of the proposed Project is estimated to take 8 years – starting in 2021 and ending in 2028. Following construction, it was assumed that the TAC emissions for the worker's 17 remaining years of the 25-year exposure period would be equal to the increment of the operations-related TAC emissions from 2028 with the proposed Project over 2018 baseline operations.

Incremental MEI cancer risk for off-airport workers is estimated to be 5 in 1 million, which is below the threshold of significance of 10 in 1 million. The MEI cancer risk location for off-airport workers is shown on **Figure 4.1.2-2**.

Residents

For the purposes of evaluating MEI cancer risk, residential risks were evaluated using 155 representative off-airport receptor locations identified as residential, residential/commercial, or sensitive receptor locations. Construction of the proposed Project is estimated to take 8 years – starting in 2021 and ending in 2028. Following construction, it was assumed that annual operations-related TAC emissions would be equal to the increment of the operations-related TAC emissions from 2028 with the proposed Project over 2018 baseline operations for each receptors remaining years in their respective exposure periods, as defined in Table 4.1.2-2.



Legend

- LAX Property Boundary
- MEI Adult Resident Cancer Risk
- MEI Child Resident Cancer Risk
- MEI Off-Airport Worker Cancer Risk
- MEI School Child Cancer Risk
- Peak Existing School Child Cancer Risk
- Commercial
- On-Airport Commercial
- On-Airport Construction, Commercial
- Residential
- Residential/Commercial
- California State Highway
- Interstate Highway

Notes:

1. Grid points indicate locations where receptors were evaluated for the construction scenario. Receptor types are indentified in the legend.
2. Because future schools could be sited in any area zoned as residential, school child receptors were evaluated at all residential grid nodes.
3. Cancer risk theshold is 10 in 1 million. None of the cancer risks exceed this threshold. Only the maximum incremental cancer risk is shown on this figure.
4. Construction of the proposed project is estimated to take 8 years - starting in 2021 and ending in 2028. Following construction, it was assumed that beginning in the 8th year (2028) construction and operations would be overlapping and continuing through the remainder of the receptors' exposure periods. Starting in 2028, receptors would be exposed to incremental 2028 With Project operations-related TAC as compared to the 2018 baseline operations.

0 1.5 Miles
Scale

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, August 2020
Prepared by: CDM Smith, October 2020

LAX Airfield and Terminal Modernization Project	Peak Incremental Cancer Risk Locations - Construction	Figure 4.1.2-2

Incremental MEI cancer risks for 30-year and 70-year adult residents are estimated to be -1 in 1 million and -2 in 1 million, respectively. Both values are below the threshold of significance of 10 in 1 million. The negative values indicate that compared to the 2018 baseline, the proposed Project would result in decreases of some TAC concentrations (most notably DPM), which thereby results in decreases in cancer risk estimates, producing beneficial impacts for adult residents. Over 90 percent of cancer risk is driven by DPM, and DPM emissions from both on-road truck and shuttle trips, as well as from airport ground support equipment, would be lower under the proposed Project,[36] producing the reduction in cancer risk. The MEI cancer risk location for adult residents is shown on Figure 4.1.2-2.

Incremental MEI cancer risk for child residents is estimated to be -0.1 in 1 million, which is below the threshold of significance of 10 in 1 million. Because children have a shorter exposure period than adults and beneficial effects are cumulative with each year of exposure, they would experience less beneficial impacts than adults, resulting in a higher incremental cancer risk. The MEI cancer risk location for child residents is shown on Figure 4.1.2-2.

School Children

For the purposes of evaluating MEI cancer risk, 12-year school child risks were evaluated using 155 representative off-airport receptor locations identified as residential, residential/commercial, or sensitive receptor locations. Construction of the proposed Project is estimated to take 8 years – starting in 2021 and ending in 2028. Following construction, it was assumed that for the remaining 4 years of their 12-year exposure period, school children would be exposed to operations-related TAC emissions equivalent to the increment of the operations-related TAC emissions from 2028 with the proposed Project over 2018 baseline operations.

Incremental MEI cancer risk for school children is estimated to be -0.2 in 1 million, which is below the threshold of significance of 10 in 1 million. The MEI cancer risk location for school children is shown on Figure 4.1.2-2. This MEI location is at a residential grid location and not at an existing school location. The highest estimated cancer risk for school children at an existing school is estimated to be -0.4 in 1 million at Cowan Avenue Elementary School (the school at grid point 176).

4.1.2.5.1.2 Operations

As noted in Section 4.1.2.2.1, incremental operations-related TAC estimated for the proposed Project from 2028 With Project compared to the 2018 baseline conditions is used to determine the significance of operational human health impacts under CEQA. For informational purposes, the 2028 Future Without Project scenario was also compared to the 2018 baseline conditions; however, the level of significance of Project-related human health impacts is not determined based on this comparison.

Comparison of 2028 With Project and 2018 Baseline Conditions

The MEI cancer risks associated with TAC exposure starting during the first year of operations in 2028 and continuing throughout the remainder of each exposure period are presented in **Table 4.1.2-3**. Supporting risk calculations are included in **Appendix C.6** for all receptors. As shown, operations-related incremental cancer risks would be ***less than significant*** for off-airport workers, residents, or school children.

[36] As discussed in Section 4.1.1.5.2.1 and shown in Table 4.1.1-10 in Section 4.1.1, *Air Quality*, although there would be more GSE equipment operating hours in 2028 under the Future With Project scenario, the cleaner GSE fleet would result in a decrease in emissions in 2028 compared to 2018 for all pollutants.

Table 4.1.2-3
Incremental Cancer Risks for Maximally Exposed Individuals during the With Project Operational Period Compared to 2018 Baseline

Receptor Type	Cancer Risks[1,2,3,4] (per million people)	Threshold (per million people)	Equal to or Exceeds Threshold?
Off-Airport Worker, 25 years	5	10	No
Adult Resident, 70 years	-4	10	No
Adult Resident, 30 years	-4	10	No
Child Resident, 9 years	-3	10	No
School Child, 12 years	-1	10	No

Source: **Appendix C.6** of this EIR.

Notes:

1 It was assumed that for operations, receptors are exposed to operations-related TAC beginning in 2028 and continuing through the remainder of the receptors' exposure periods.

2 Maximally Exposed Individual (MEI) locations are shown on Figure 4.1.2-3.

3 The MEI value for the school child cancer risk is at a residential/commercial grid location and not at an existing school location. The highest estimated cancer risk for school children at an existing school is estimated to be -1 in 1 million at Cowan Avenue Elementary School (the school at grid point 176).

4 Negative values indicate a beneficial impact.

Off-Airport Workers

For the purposes of evaluating MEI cancer risk, off-airport workers were evaluated at 239 representative off-airport receptor locations (identified as commercial or residential/commercial) for exposure to operations-related TAC beginning the 8th year of overlapping construction and operations (2028) and continuing for the 17 remaining years of the worker's 25-year exposure period. Incremental MEI cancer risk for off-airport workers is estimated to be 5 in 1 million, which is below the threshold of significance of 10 in 1 million. The MEI cancer risk location for off-airport workers is shown on **Figure 4.1.2-3**.

Residents

For the purposes of evaluating MEI cancer risk, residential risks were evaluated using 155 representative off-airport receptor locations identified as residential, residential/commercial, or sensitive receptor locations for exposure to operations-related TAC beginning the 7th year of overlapping construction and operations (2028) and continuing through the remainder of the 30-year or 70-year exposure period for the adult and 9-year exposure period for the child.

Incremental MEI cancer risks for 30-year and 70-year adult residents are both estimated to be -4 in 1 million. The value is negative, indicating a beneficial impact, and below the threshold of significance of 10 in 1 million. The MEI cancer risk location for adult residents is shown on Figure 4.1.2-3.

Incremental MEI cancer risk for child residents is estimated to be -3 in 1 million, which is negative, indicating a beneficial impact, and below the threshold of significance of 10 in 1 million. The MEI cancer risk location for child residents is shown on Figure 4.1.2-3.

School Children

For the purposes of evaluating MEI cancer risk, 12-year school child risks were evaluated using 155 representative off-airport receptor locations identified as residential, residential/commercial, or sensitive receptor locations for exposure to operations-related TAC beginning the 7th year of overlapping construction and operations (2028) and continuing through the remainder of their 12-year exposure period.



Legend

- LAX Property Boundary
- MEI Resident Cancer Risk
- MEI Off-Airport Worker Cancer Risk
- MEI School Child Cancer Risk
- Peak Existing School Child Cancer Risk
- Commercial
- On-Airport Commercial
- On-Airport Construction, Commercial
- Residential
- Residential/Commercial
- California State Highway
- Interstate Highway

Notes:

1. Grid points indicate locations where receptors were evaluated for the operations scenario. Receptor types are indentified in the legend.
2. Because future schools could be sited in any area zoned as residential, school child receptors were evaluated at all residential grid nodes.
3. Cancer risk theshold is 10 in 1 million. None of the cancer risks exceed this threshold. Only the maximum incremental cancer risk is shown on this figure.
4. It was assumed that for operations, receptors are exposed to operations-related TAC beginning in 2028 and continuing through the remainder of the receptors' exposure periods.

0 1.5 Miles
Scale

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, August 2020
Prepared by: CDM Smith, October 2020

LAX Airfield and Terminal Modernization Project	Peak Incremental Cancer Risk Locations - Operations (2028 With Project Compared to 2018 Baseline)	Figure **4.1.2-3**

Incremental MEI cancer risk for school children is estimated to be -1 in 1 million, which is negative, indicating a beneficial impact, and below the threshold of significance of 10 in 1 million. The MEI cancer risk location for school children is shown on Figure 4.1.2-3. This MEI location is at a residential/commercial grid location and not at an existing school location. The highest estimated cancer risk for school children at an existing school is estimated to be -1 in 1 million at Cowan Avenue Elementary School (the school at grid point 176).

Comparison of 2028 With Project and 2028 Without Project

As noted in Section 4.1.2.2.1, the 2028 With Project scenario was also compared to the 2028 Without Project scenario for informational purposes. The incremental cancer risks associated with operations-related TAC exposure for MEI for both scenarios was calculated in comparison to 2018 baseline conditions and are presented in **Table 4.1.2-4.** MEI locations are shown in **Figure 4.1.2-4**. Supporting risk calculations are included in **Appendix C.6** for all receptors. Incremental MEI cancer risks for the 2028 Without Project scenario compared to 2018 baseline conditions are the same or lower than the incremental cancer risks for the 2028 With Project scenario compared to 2018 baseline conditions for the evaluated receptors.

Table 4.1.2-4
Incremental Cancer Risks for Maximally Exposed Individuals for 2028 With Project Operations Compared to 2018 Baseline and 2028 Without Project Compared to 2018 Baseline

Receptor Type	Incremental Cancer Risks[1,2,3,4] (per million people)	
	2028 With Project Operations Compared to 2018 Baseline	2028 Without Project Operations Compared to 2018 Baseline
Off-Airport Worker, 25 years	5	-0.2
Adult Resident, 70 years	-4	-4
Adult Resident, 30 years	-4	-3
Child Resident, 9 years	-3	-2
School Child, 12 years	-1	-0.9

Source: **Appendix C.6** of this EIR.

Notes:

1 It was assumed that for operations, receptors are exposed to operations-related TAC beginning in 2028 and continuing through the remainder of the receptors' exposure periods.

2 Maximally Exposed Individual (MEI) locations are shown on Figure 4.1.2-4.

3 The MEI value for the school child cancer risk is at a residential/commercial grid location and not at an existing school location. The highest estimated cancer risk for school children at an existing school is estimated to be -1 in 1 million at Cowan Avenue Elementary School (the school at grid point 176).

4 Negative values indicate a beneficial impact.

4.1.2.5.1.3 Mitigation Measures

Because the proposed Project would result in a ***less than significant impact*** relative to incremental cancer risk, no mitigation is required for construction or operations. However, it should be noted that mitigation measures that are recommended to reduce air pollutant emissions, greenhouse gas emissions, and transportation impacts would also reduce human health risk impacts. Such measures that address construction impacts are Mitigation Measures MM-AQ/GHG (ATMP)-1 and 2, described in Section 4.1.1, *Air Quality.* Such measures that address operational impacts are Mitigation Measures MM-AQ/GHG (ATMP)-5 described in Section 4.1.1, *Air Quality;* MM GHG (ATMP)-3, described in Section 4.4, *Greenhouse Gas Emissions*; and MM-TR (ATMP)-1, described in Section 4.8, *Transportation*.



Legend

- LAX Property Boundary
- MEI Resident Cancer Risk
- MEI Off-Airport Worker Cancer Risk
- Peak Existing School Child Cancer Risk
- MEI School Child Cancer Risk
- Commercial
- On-Airport Commercial
- On-Airport Construction, Commercial
- Residential
- Residential/Commercial
- California State Highway
- Interstate Highway

Notes:

1. Grid points indicate locations where receptors were evaluated for the operations scenario. Receptor types are indentified in the legend.
2. Because future schools could be sited in any area zoned as residential, school child receptors were evaluated at all residential grid nodes.
3. Cancer risk theshold is 10 in 1 million. None of the cancer risks exceed this threshold. Only the maximum incremental cancer risk is shown on this figure.
4. It was assumed that for operations, receptors are exposed to operations-related TAC beginning in 2028 and continuing through the remainder of the receptors' exposire periods.

0 0.5 1.5 Miles
Scale

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, August 2020
Prepared by: CDM Smith, October 2020

LAX Airfield and Terminal Modernization Project	Peak Incremental Cancer Risk Locations - Operations (2028 Future Without Project Compared to 2018 Baseline)	Figure 4.1.2-4

4.1.2.5.1.4 Significance of Impact After Mitigation

As indicated above, no mitigation is required to address the potential for the Project to result in incremental cancer risk. The proposed Project would result in a ***less than significant impact*** for construction and operations.

4.1.2.5.2 Impact 4.1.2-2

Summary Conclusion for Impact 4.1.2-2: The proposed Project would not result in a cancer burden greater than, or equal to, 0.5 excess cancer cases in areas within the greater than 1 in 1 million zone of impact. This would be a *less than significant impact* for construction and operations.

4.1.2.5.2.1 Construction

The incremental MEI cancer risk estimates (presented in Table 4.1.2-2) during proposed Project construction do not exceed the significance threshold of 10 in one million. In addition, the MEI cancer risk estimate for the 70-year residential scenario is negative. Since a beneficial impact occurs at this maximally exposed location, this indicates that all estimated impacts under this scenario are negative. Thus, when these negative cancer risks are multiplied by the census tract population, the cancer burden for the proposed Project is also negative. When summed across all census tracts, the total cancer burden would be negative and less than the significance threshold of 0.5. Therefore, construction-related cancer burden would be ***less than significant*** for the proposed Project.

4.1.2.5.2.2 Operations

Comparison of 2028 With Project and 2018 Baseline Conditions

The incremental MEI cancer risk estimates (presented in Table 4.1.2-3) during proposed Project operations do not exceed the significance threshold of 10 in one million. In addition, the MEI cancer risk estimate for the 70-year residential scenario is negative. Since a beneficial impact occurs at this maximally exposed location, this indicates that all estimated impacts under this scenario are negative. Thus, when these negative cancer risks are multiplied by the census tract population, the cancer burden for the proposed Project is also negative. When summed across all census tracts, the total cancer burden would be negative and less than the significance threshold of 0.5. Therefore, operations-related cancer burden would be ***less than significant*** for the proposed Project.

Comparison of 2028 With Project and 2028 Without Project

As noted in Section 4.1.2.2.1, the 2028 With Project scenario was also compared to the 2028 Without Project scenario for informational purposes. As presented in Table 4.1.2-4, the incremental MEI cancer risk estimates for the 2028 Without Project scenario over the 2018 baseline operations for the 70-year residential scenario is negative. Since a beneficial impact occurs at this maximally exposed location, this indicates that all estimated impacts under this scenario are negative. Thus, when these negative cancer risks are multiplied by the census tract population, the cancer burden for the 2028 Without Project scenario over the 2018 baseline operations is also negative.

4.1.2.5.2.3 Mitigation Measures

Because the proposed Project would result in a ***less than significant impact*** related to cancer burden, no mitigation is required for construction or operations. However, it should be noted that mitigation measures that are recommended to reduce air pollutant emissions, greenhouse gas emissions, and transportation impacts would also reduce human health risk impacts. Such measures that address construction impacts are Mitigation Measures MM-AQ/GHG (ATMP)-1 and 2, described in Section 4.1.1, *Air Quality.* Such measures that address operational impacts are Mitigation Measures

MM-AQ/GHG (ATMP)-5 described in Section 4.1.1, *Air Quality;* MM GHG (ATMP)-3, described in Section 4.4, *Greenhouse Gas Emissions*; and MM-TR (ATMP)-1, described in Section 4.8, *Transportation*.

4.1.2.5.2.4 Significance of Impact After Mitigation

As indicated above, no mitigation is required to address the potential for the Project to result in cancer burden. The proposed Project would result in a ***less than significant impact*** for construction and operations.

4.1.2.5.3 Impact 4.1.2-3

Summary Conclusion for Impact 4.1.2-3: The proposed Project would not result in a total incremental chronic hazard index (HI) greater than, or equal to, 1 for any target organ system at any receptor location. This would be a *less than significant impact* for construction and operations.

4.1.2.5.3.1 Construction

Project-related chronic non-cancer hazard indices for construction-related TAC exposure are presented in Table 4.1.2-4. Chronic non-cancer health hazards were evaluated for all receptor locations by initially calculating maximum HI by summing the HQs for all TAC, irrespective of target organ. If the screening had resulted in an HI exceeding the HI threshold of 1, a detailed analysis would have been used, which would have summed the HQs of all TAC known to affect like organ systems and presented the maximum HI for any organ system. However, as shown in **Table 4.1.2-5**, the maximum total HI for chronic exposure to all TAC during construction would not be greater than the threshold of 1; thus, no organ-system breakdown was necessary. Incremental hazard indices are shown for the peak year of construction (2023). As shown, chronic non-cancer human health hazards would be ***less than significant*** at both resident and worker receptor locations during proposed Project construction.

Table 4.1.2-5
Incremental Chronic Non-Cancer Human Health Hazards for Maximally Exposed Individuals during Peak With Project Construction and 2028 With Project Operations Compared to 2018 Baseline

Year	Resident HI[1]	Worker HI[1]	Significance Threshold	Equal to or Exceeds Threshold?
Peak Construction Year, 2023	0.08	0.3	1	No
First Year of Operations, 2028	0.02	0.09	1	No

Source: **Appendix C.6** of this EIR.

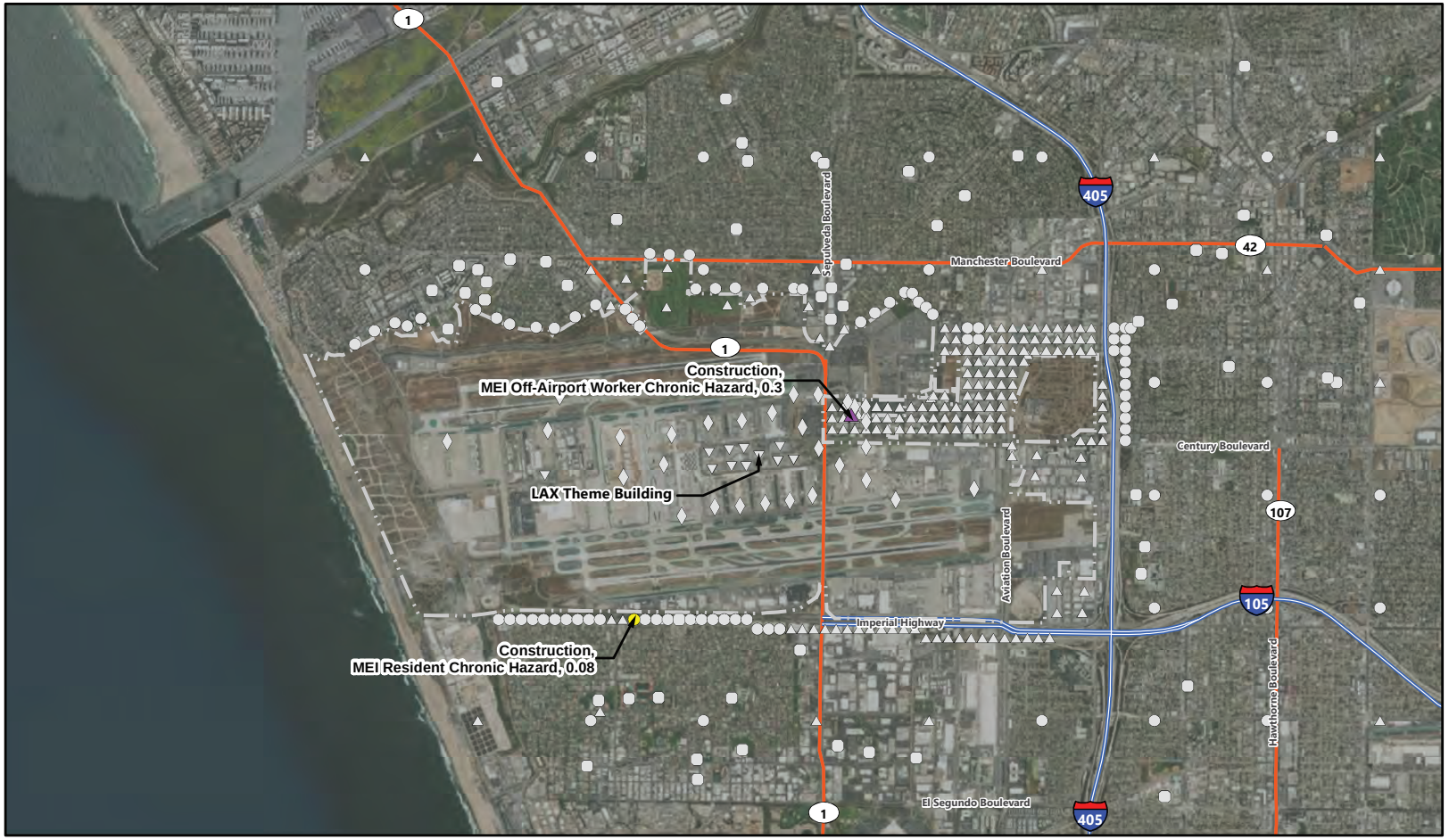
Note:
[1] Hazard indices (HI) are unitless.

Off-Airport Workers

The maximum total chronic non-cancer HI for an off-airport adult worker working in the study area during construction is 0.3, projected to occur in 2023. The peak off-airport adult worker hazard location during construction is shown on **Figure 4.1.2-5**. As shown in Table 4.1.2-5, the peak incremental chronic non-cancer health hazard for off-airport workers would be below the significance threshold of 1.

Residents

The maximum total chronic non-cancer HI for a resident living in the study area during construction is 0.08, projected to occur in 2023. The peak residential hazard location during construction is shown on Figure 4.1.2-5. As shown in Table 4.1.2-5, the peak incremental chronic non-cancer health hazard for residents would be below the significance threshold of 1.



Legend

- LAX Property Boundary
- MEI Resident Chronic Hazard
- MEI Off-Airport Worker Chronic Hazard
- Commercial
- On-Airport Commercial
- On-Airport Construction, Commercial
- Residential
- Residential/Commercial
- Interstate Highway
- California State Highway

Notes:
1. Grid points indicate locations where receptors were evaluated for the construction scenario. Receptor types are identified in the legend.
2. Non-cancer hazard index threshold is 1. None of the non-cancer hazard indices exceed this threshold. Only the maximum incremental non-cancer hazard index is shown on this figure.

0 0.5 1 Miles
Scale

Source: CEsri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, August 2020
Prepared by: CDM Smith, October 2020

LAX Airfield and Terminal Modernization Project

Peak Incremental Chronic Hazard Locations - Construction

Figure
4.1.2-5

4.1.2.5.3.2 Operations

Comparison of 2028 With Project and 2018 Baseline Conditions

Project-related chronic incremental non-cancer hazard indices for operations-related TAC exposure are presented in Table 4.1.2-5. Incremental hazard indices are shown for the first year of operations (2028). Incremental operations-related TAC concentrations were estimated by comparing 2028 with proposed Project TAC concentrations to 2018 baseline operations TAC concentrations. Chronic non-cancer health hazards were evaluated for all receptor locations by initially calculating maximum HI by summing the HQs for all TAC, irrespective of target organ. If the screening had resulted in an HI exceeding the HI threshold of 1, a detailed analysis would have been used, which would have summed the HQs of all TAC known to affect like organ systems and presented the maximum HI for any organ system. However, as shown in Table 4.1.2-5, the maximum total HI for chronic exposure to all TAC during Project operations would not be greater than the threshold of 1; thus, no organ-system breakdown was necessary. As shown, chronic non-cancer human health hazards would be ***less than significant*** at both resident and worker receptor locations during proposed Project operations.

Off-Airport Workers

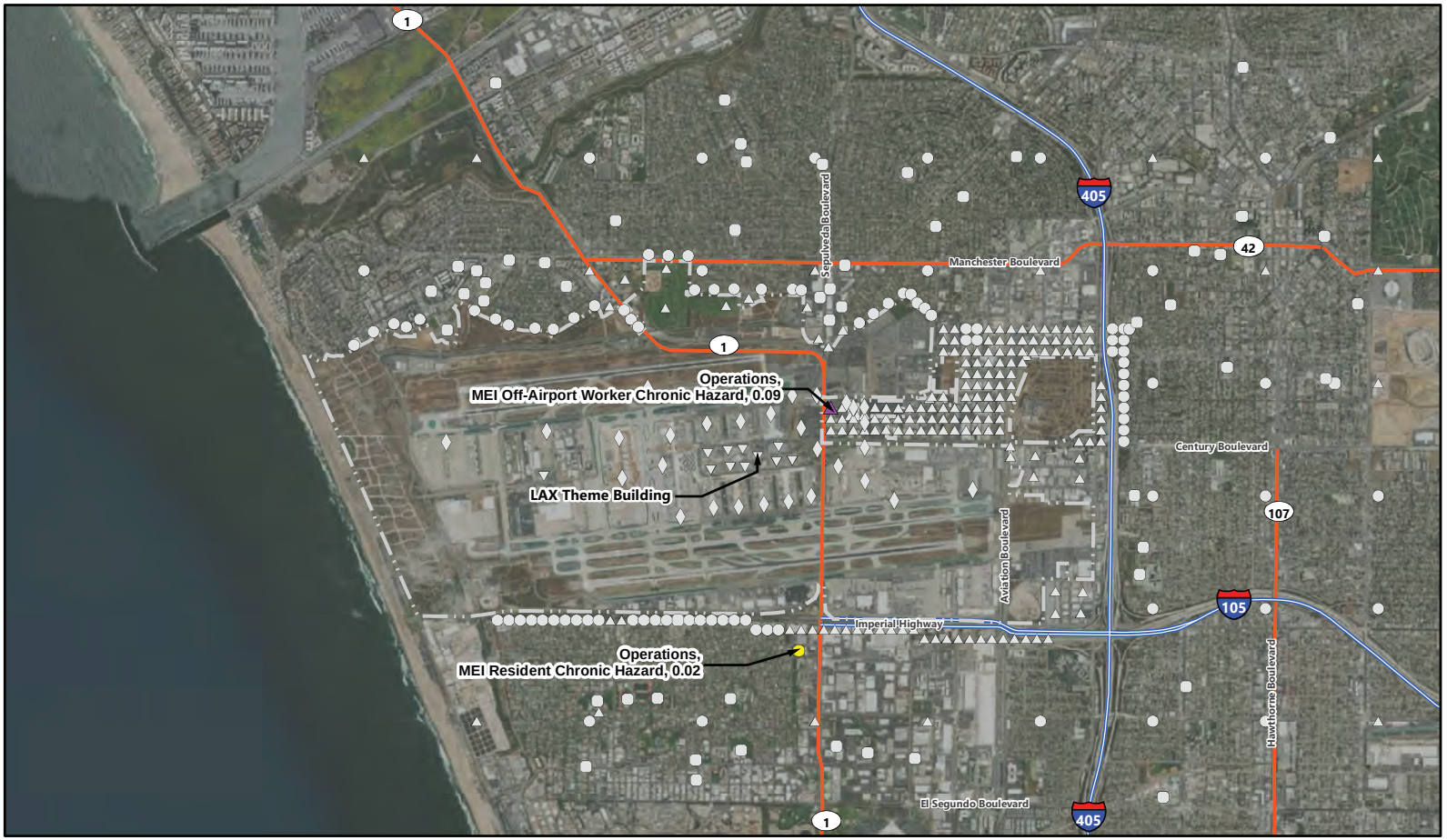
The maximum total chronic non-cancer HI for an off-airport adult worker at the peak hazard location for the first year of operations is 0.09. The peak off-airport adult worker hazard location for operations is shown on **Figure 4.1.2-6**. As shown in Table 4.1.2-5, peak incremental chronic non-cancer health hazards for off-airport workers would be below the significance threshold of 1.

Residents

The maximum HI for a resident living in the study area for the first year of operations is 0.02. The peak residential hazard location for operations is shown on Figure 4.1.2-6. As shown in Table 4.1.2-5, peak incremental chronic non-cancer health hazards for residents would be below the significance threshold of 1.

Comparison of 2028 With Project and 2028 Without Project

As noted in Section 4.1.2.2.1, the 2028 With Project conditions were also compared to the 2028 Without Project conditions for informational purposes. Project-related chronic incremental non-cancer hazard indices for operations-related TAC exposure for these scenarios are presented in **Table 4.1.2-6**.



Legend

- LAX Property Boundary
- MEI Resident Chronic Hazard
- MEI Off-Airport Worker Chronic Hazard
- Commercial
- On-Airport Commercial
- On-Airport Construction, Commercial
- Residential
- Residential/Commercial
- Interstate Highway
- California State Highway

Notes:
1. Grid points indicate locations where receptors were evaluated for the operations scenario. Receptor types are identified in the legend.
2. Non-cancer hazard index threshold is 1. None of the non-cancer hazard indices exceed this threshold. Only the maximum incremental non-cancer hazard index is shown on this figure.

0 0.5 1 Miles
Scale

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, August 2020
Prepared by: CDM Smith, October 2020

LAX Airfield and Terminal Modernization Project

Peak Incremental Chronic Hazard Locations - Operations
(2028 With Project Compared to 2018 Baseline)

Figure
4.1.2-6

Table 4.1.2-6
Incremental Chronic Non-Cancer Human Health Hazards for Maximally Exposed Individuals for 2028 With Project Operations Compared to 2018 Baseline and 2028 Without Project Compared to 2018 Baseline

Receptor Type	Incremental Hazards[2]			
	2028 With Project Operations Compared to 2018 Baseline		2028 Without Project Operations Compared to 2018 Baseline	
	Resident HI[1]	Worker HI[1]	Resident HI[1]	Worker HI[1]
First Year of Operations, 2028	0.02	0.09	-0.006	0.01

Source: **Appendix C.6** of this EIR.

Notes:
1 Hazard indices (HI) are unitless.
2 Maximally Exposed Individual (MEI) locations for the 2028 With Project Operations Compared to 2018 Baseline are shown on Figure 4.1.2-6. Maximally Exposed Individual (MEI) locations for the 2028 Without Project Operations Compared to 2018 Baseline are shown on Figure 4.1.2-7.

Off-Airport Workers

The Without Project maximum chronic non-cancer HI for an off-airport adult worker at the peak hazard location for the first year of operations is 0.01. The peak off-airport adult worker hazard location for operations is shown on **Figure 4.1.2-7**.

Residents

The Without Project maximum HI for a resident living in the study area for the first year of operations is -0.006. The peak residential hazard location for operations is shown on Figure 4.1.2-7.

4.1.2.5.3.3 Mitigation Measures

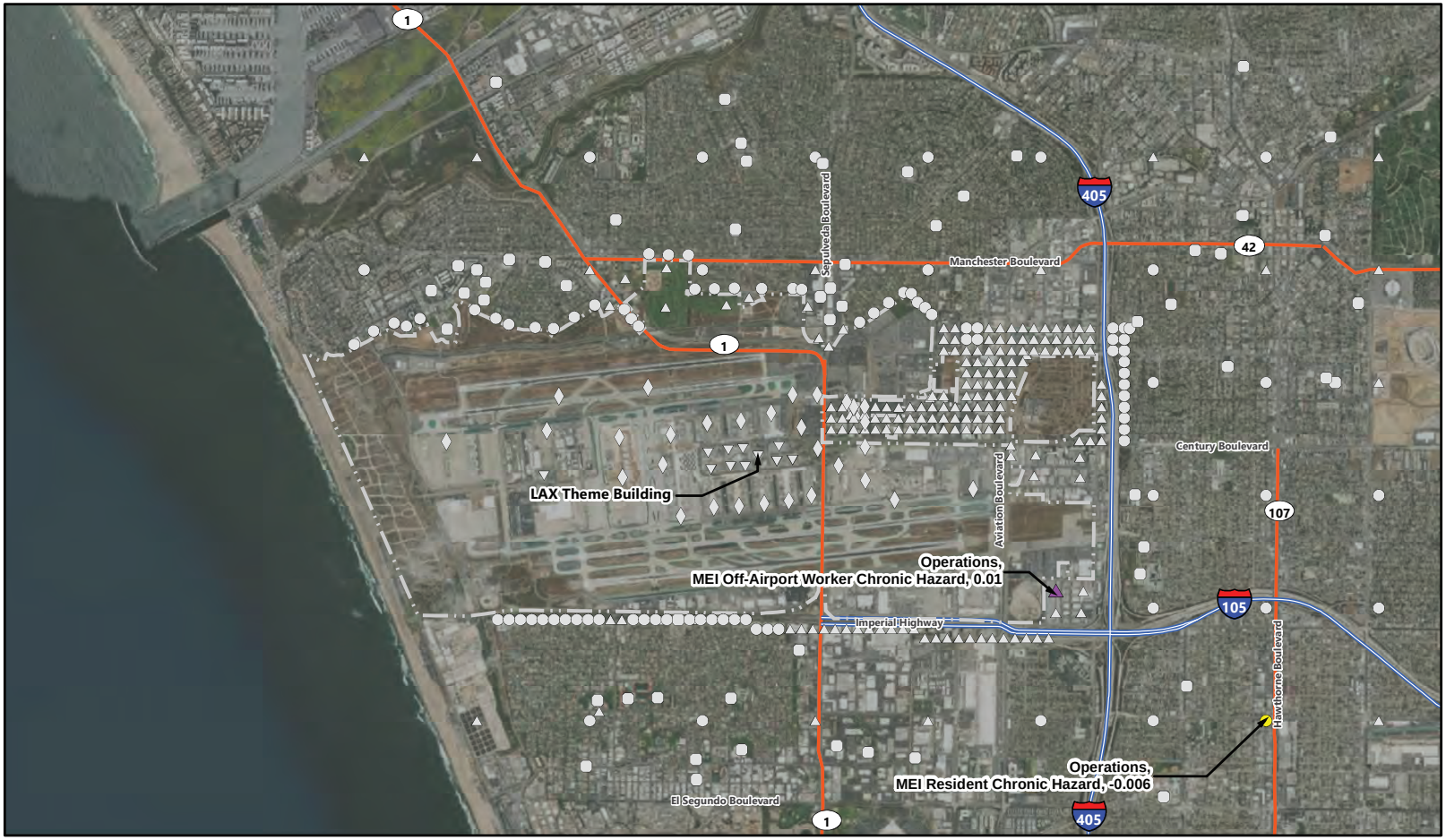
Because the proposed Project would result in a ***less than significant impact*** related to incremental chronic non-cancer health hazards, no mitigation is required for construction or operations. However, it should be noted that mitigation measures that are recommended to reduce air pollutant emissions, greenhouse gas emissions, and transportation impacts would also reduce human health risk impacts. Such measures that address construction impacts are Mitigation Measures MM-AQ/GHG (ATMP)-1 and 2, described in Section 4.1.1, *Air Quality.* Such measures that address operational impacts are Mitigation Measures MM-AQ/GHG (ATMP)-5 described in Section 4.1.1, *Air Quality;* MM GHG (ATMP)-3, described in Section 4.4, *Greenhouse Gas Emissions*; and MM-TR (ATMP)-1, described in Section 4.8, *Transportation*.

4.1.2.5.3.4 Significance of Impact After Mitigation

As indicated above, no mitigation is required to address the potential for the Project to result in incremental chronic non-cancer health hazards. The proposed Project would result in a ***less than significant impact*** for construction and operations.

4.1.2.5.4 Impact 4.1.2-4

Summary Conclusion for Impact 4.1.2-4: The proposed Project would not result in a total incremental acute HI greater than, or equal to, 1 for any target organ system at any receptor location. This would be a *less than significant impact* for construction and operations.



Legend

- LAX Property Boundary
- MEI Resident Chronic Hazard
- MEI Off-Airport Worker Chronic Hazard
- Commercial
- On-Airport Commercial
- On-Airport Construction, Commercial
- Residential
- Residential/Commercial
- Interstate Highway
- California State Highway

Notes:
1. Grid points indicate locations where receptors were evaluated for the operations scenario. Receptor types are identified in the legend.
2. Non-cancer hazard index threshold is 1. None of the non-cancer hazard indices exceed this threshold. Only the maximum incremental non-cancer hazard index is shown on this figure.

0 0.5 1 Miles
Scale

Source: CEsri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, August 2020
Prepared by: CDM Smith, October 2020

LAX Airfield and Terminal Modernization Project

Peak Incremental Chronic Hazard Locations - Operations
(2028 Future Without Project Compared to 2018 Baseline)

Figure
4.1.2-7

4.1.2.5.4.1 Construction

Acute non-cancer health hazards were evaluated for each year of construction from 2021 to 2028. Project sources were estimated using the AERMOD option for 1-hour maximum concentrations. These concentrations represent the highest predicted concentrations of TAC for a 1-hour period. The peak emission year for acute non-cancer health hazards during construction was identified as 2023.

Acute non-cancer health hazards were evaluated for all receptor locations by initially calculating maximum HI by summing the HQs for all TAC, irrespective of target organ and TAC location. If the screening had resulted in an HI exceeding the HI threshold of 1, a detailed analysis would have been used, which would have summed the HQs of all TAC known to affect like organ systems and presented the maximum HI for any organ system. However, as shown in **Table 4.1.2-7**, the maximum HI for acute 1-hour exposure to all TAC during construction would not be greater than the threshold of 1; thus, no organ-system breakdown was necessary. Construction-related acute non-cancer health hazards would be ***less than significant*** for off-airport workers and residents.

Table 4.1.2-7
Peak Construction-Related Incremental Acute (1-Hour) Non-Cancer Health Hazards for With Project

MEI (Construction)	Acrolein HQ[1]	Benzene HQ[1]	Formaldehyde HQ[1]	Manganese HQ[1]	Nickel HQ[1]	Total HI[2]	Significance Threshold	Equal to or Exceeds Threshold?
Off-Airport Adult Worker	0.2	0.04	0.1	0.1	0.009	0.5	1	No
Resident	0.2	0.02	0.06	0.03	0.003	0.3	1	No

Source: **Appendix C.6** of this EIR.

Notes:

[1] Hazard quotients (HQs) and hazard indices (HIs) are unitless.

[2] Total acute non-cancer health hazards may not add up exactly due to trace hazard quotients from unlisted TAC. The HQs for the TACs shown represent 97 percent or more of the calculated peak total hazard index.

Off-Airport Workers

For construction-related health hazards evaluated for acute 1-hour exposure, the maximum HI at the peak off-airport adult worker hazard location is 0.5, which is less than the threshold of 1. The peak acute hazard locations for off-airport adult worker is shown on **Figure 4.1.2-8**.

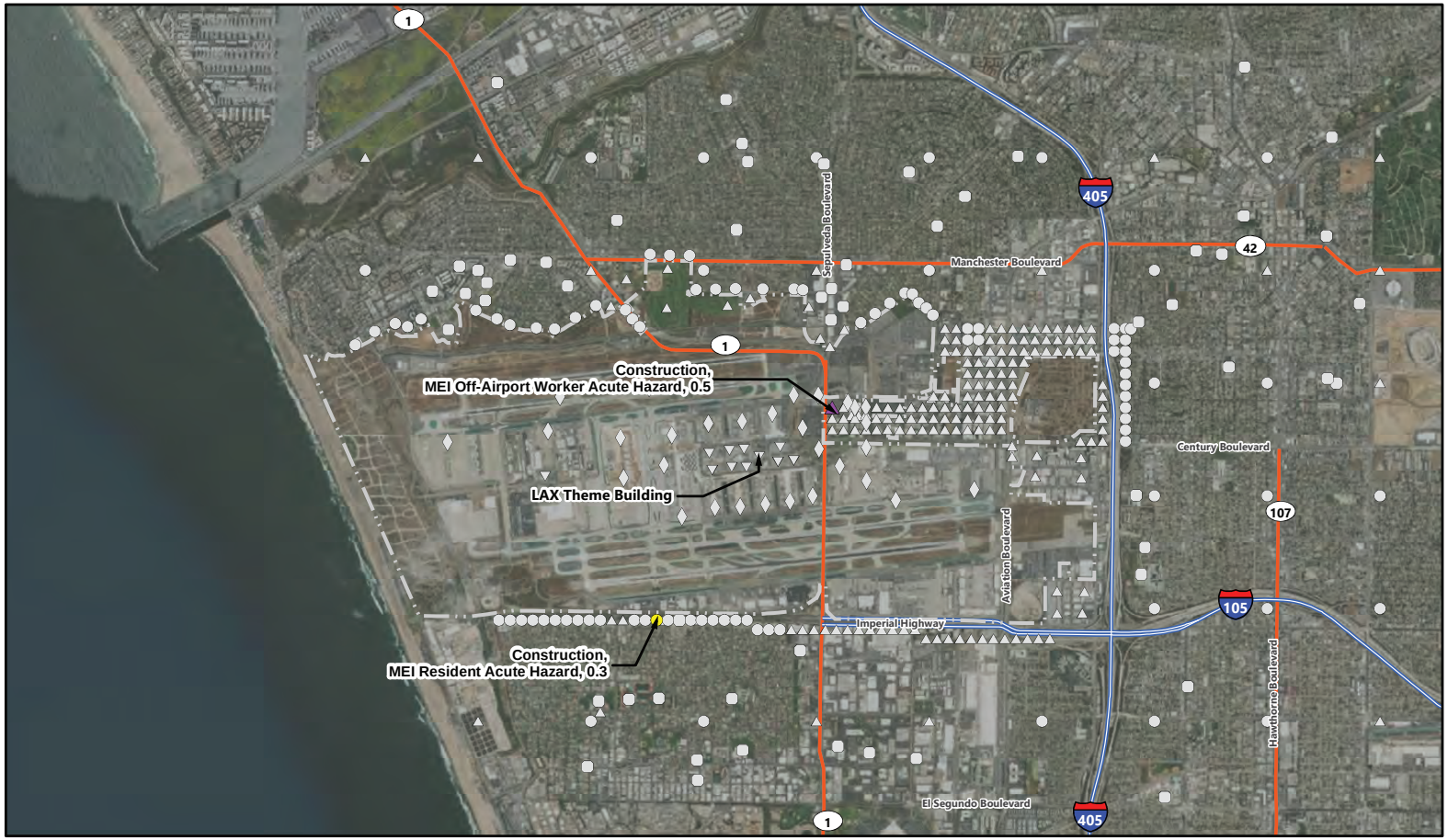
Residents

For construction-related health hazards evaluated for acute 1-hour exposure, the maximum HI at the peak residential location is 0.3, which is less than the threshold of 1. The peak acute hazard locations for residents are shown on Figure 4.1.2-8.

4.1.2.5.4.2 Operations

Comparison of 2028 With Project and 2018 Baseline Conditions

Acute non-cancer health hazards were evaluated for operations in 2028. Project sources were estimated using the AERMOD option for 1-hour maximum concentrations. Incremental operations-related TAC concentrations were estimated by comparing 2028 with proposed Project TAC concentrations to 2018 baseline operations TAC concentrations. These concentrations represent the highest predicted incremental concentrations of TAC for a 1-hour period.



Legend

- LAX Property Boundary
- MEI Resident Acute Hazard
- MEI Off-Airport Worker Acute Hazard
- Commercial
- On-Airport Commercial
- On-Airport Construction, Commercial
- Residential
- Residential/Commercial
- Interstate Highway
- California State Highway

Notes:
1. Grid points indicate locations where receptors were evaluated for the construction scenario. Receptor types are identified in the legend.
2. Acute non-cancer hazard index threshold is 1. None of the acute non-cancer hazard indices exceed this threshold. Only the maximum incremental non-cancer hazard index is shown on this figure.

0 0.5 1 Miles
Scale

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, August 2020
Prepared by: CDM Smith, October 2020

LAX Airfield and Terminal Modernization Project	Peak Incremental Acute Hazard Locations - Construction	Figure **4.1.2-8**

Acute non-cancer health hazards were evaluated for all receptor locations by initially calculating maximum HI by summing the maximum HQs for all TAC, irrespective of target organ and TAC location. If the screening had resulted in an HI exceeding the HI threshold of 1, a detailed analysis would have been used, which would have summed the HQs of all TAC known to affect like organ systems and presented the maximum HI for any organ system. However, as shown in **Table 4.1.2-8**, the maximum HI for acute 1-hour exposure to all TAC during operations would be less than the threshold of 1; thus, no organ-system breakdown was necessary. Operations-related acute non-cancer health hazards would be ***less than significant*** for off-airport workers and residents.

Table 4.1.2-8
Operation-Related Incremental Acute (1-Hour) Non-Cancer Health Hazards for 2028 With Project Compared to 2018 Baseline

MEI (Operation)	Acrolein HQ[1]	Benzene HQ[1]	Formaldehyde HQ[1]	Manganese HQ[1]	Nickel HQ[1]	Total HI[2]	Significance Threshold	Equal to or Exceeds Threshold?
Off-Airport Adult Worker	0.4	0.02	0.07	0.04	0.01	0.6	1	No
Resident	0.2	0.009	0.04	0.02	0.005	0.3	1	No

Source: **Appendix C.6** of this EIR.

Notes:

1 Hazard quotients (HQs) and hazard indices (HIs) are unitless.

2 Total acute non-cancer health hazards may not add up exactly due to trace hazard quotients from unlisted TAC. The HQs for the TACs shown represent 98 percent or more of the calculated peak total hazard index.

Off-Airport Workers

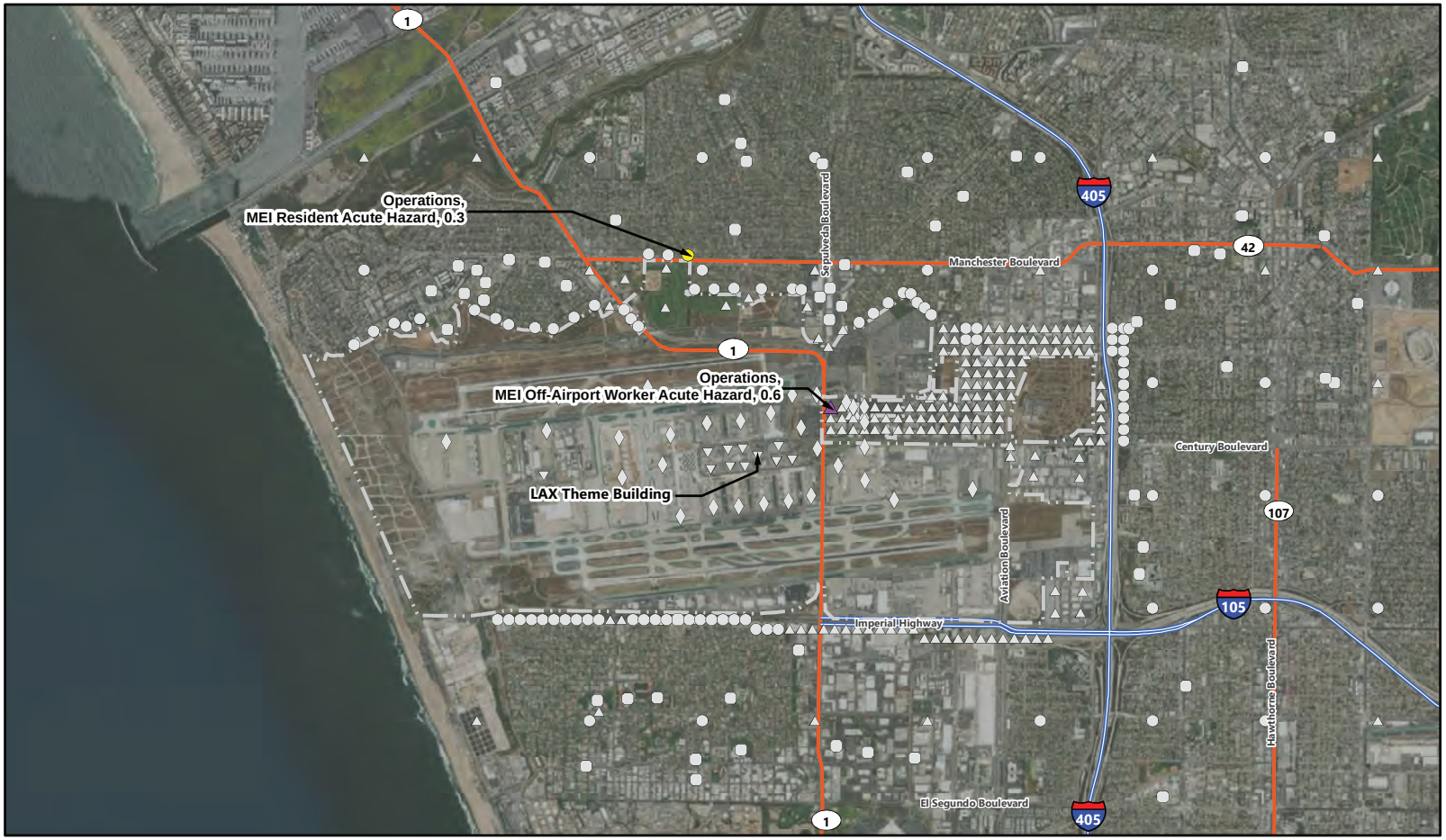
For operations-related health hazards evaluated for acute 1-hour exposure, the maximum HI at the peak off-airport adult worker hazard location is 0.6, which is less than the threshold of 1. This health hazard risk is driven by acrolein, responsible for 74 percent of the maximum HI. The peak acute hazard location for off-airport adult worker is shown on **Figure 4.1.2-9**.

Residents

For operations-related health hazards evaluated for acute 1-hour exposure, the maximum HI at the peak residential location is 0.3, which is less than the threshold of 1. This health hazard risk is driven by acrolein, responsible for 72 percent of the maximum HI. The peak acute hazard location for residents is shown on Figure 4.1.2-9.

Comparison of 2028 With Project and 2028 Without Project

As noted in Section 4.1.2.2.1, the 2028 With Project over 2018 baseline conditions was also compared to the 2028 Without Project over 2018 baseline conditions for informational purposes. Project-related acute incremental non-cancer hazard indices for operations-related TAC exposure for these scenarios are presented in **Table 4.1.2-9**.



Legend

- LAX Property Boundary
- MEI Resident Acute Hazard
- MEI Off-Airport Worker Acute Hazard
- Commercial
- On-Airport Commercial
- On-Airport Construction, Commercial
- Residential
- Residential/Commercial
- Interstate Highway
- California State Highway

Notes:
1. Grid points indicate locations where receptors were evaluated for the operations scenario. Receptor types are identified in the legend.
2. Acute non-cancer hazard index threshold is 1. None of the acute non-cancer hazard indices exceed this threshold. Only the maximum incremental non-cancer hazard index is shown on this figure.

0 0.5 1 Miles
Scale

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, August 2020
Prepared by: CDM Smith, October 2020

LAX Airfield and Terminal Modernization Project

Peak Incremental Acute Hazard Locations - Operations
(2028 With Project Compared to 2018 Baseline)

Figure
4.1.2-9

Table 4.1.2-9
Operation-Related Incremental Acute (1-Hour) Non-Cancer Health Hazards for 2028 With Project Compared to 2018 Baseline and 2028 Without Project Compared to 2018 Baseline

MEI (Operation)	Acrolein HQ[1]	Benzene HQ[1]	FormaldehydeHQ[1]	Manganese HQ[1]	Nickel HQ[1]	Total HI[2]
2028 With Project Construction Compared to 2018 Baseline						
Off-Airport Adult Worker	0.4	0.02	0.07	0.04	0.01	0.6
Resident	0.2	0.009	0.04	0.02	0.005	0.3
2028 Without Project Construction Compared to 2018 Baseline						
Off-Airport Adult Worker	0.2	0.009	0.04	0.03	0.01	0.3
Resident	0.3	0.0007	0.03	0.01	0.004	0.4

Source: **Appendix C.6** of this EIR.

Notes:

[1] Hazard quotients (HQs) and hazard indices (HIs) are unitless.

[2] Total acute non-cancer health hazards may not add up exactly due to trace hazard quotients from unlisted TAC. The HQs for the TACs shown represent 98 percent or more of the calculated peak total hazard index.

Off-Airport Workers

For Without Project operations-related health hazards evaluated for acute 1-hour exposure, the maximum HI at the peak off-airport adult worker hazard location is 0.3. The peak acute hazard location for off-airport adult worker is shown on **Figure 4.1.2-10**.

Residents

For Without Project operations-related health hazards evaluated for acute 1-hour exposure, the maximum HI at the peak residential location is 0.4. The peak acute hazard location for residents is shown on Figure 4.1.2-9.

4.1.2.5.4.3 Mitigation Measures

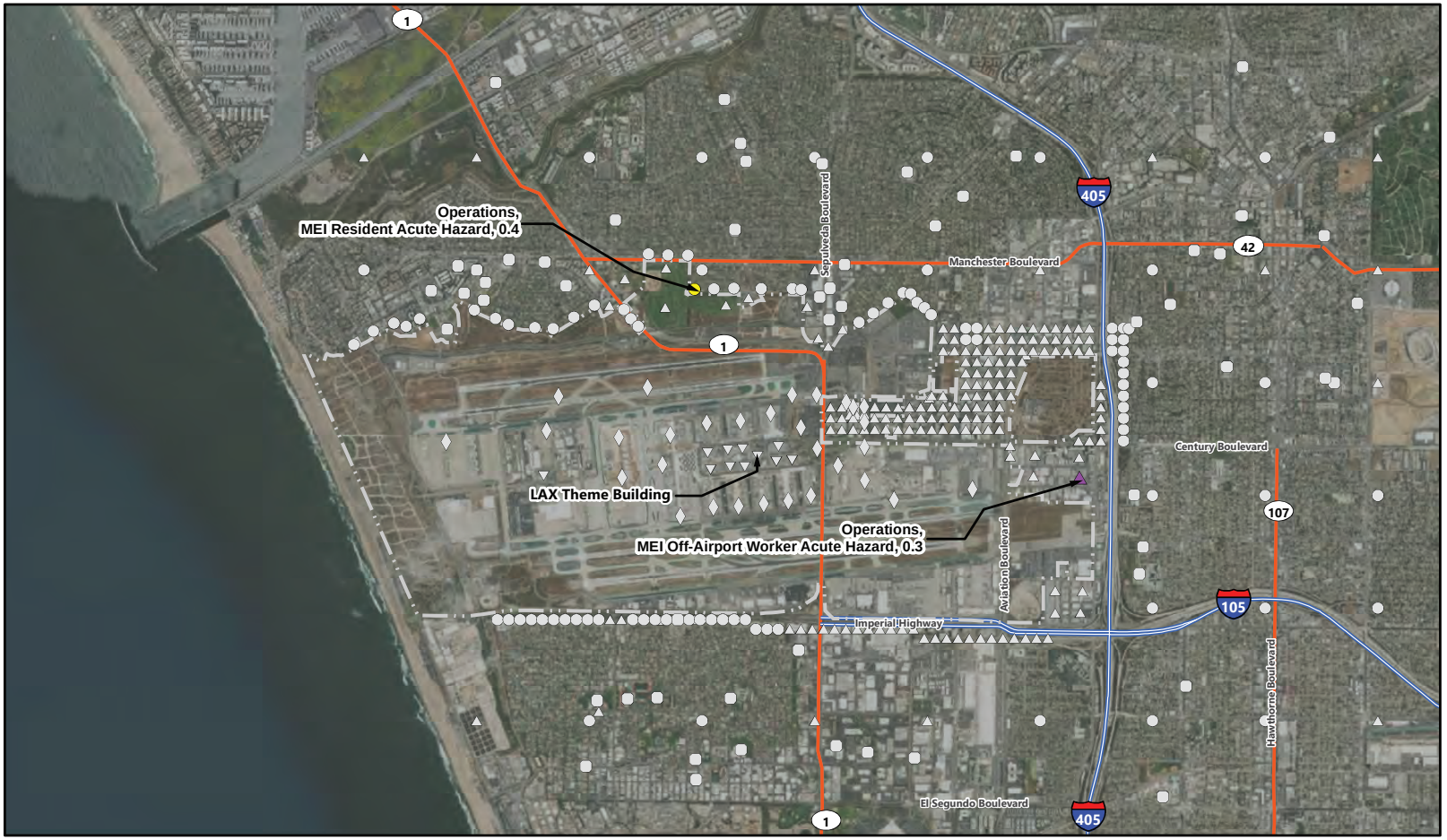
Because the proposed Project would result in a ***less than significant impact*** related to incremental acute non-cancer health hazards, no mitigation is required for construction or operations. However, it should be noted that mitigation measures that are recommended to reduce air pollutant emissions, greenhouse gas emissions, and transportation impacts would also reduce human health risk impacts. Such measures that address construction impacts are Mitigation Measures MM-AQ/GHG (ATMP)-1 and 2, described in Section 4.1.1, *Air Quality.* Such measures that address operational impacts are Mitigation Measures MM-AQ/GHG (ATMP)-5 described in Section 4.1.1, *Air Quality;* MM GHG (ATMP)-3, described in Section 4.4, *Greenhouse Gas Emissions*; and MM-TR (ATMP)-1, described in Section 4.8, *Transportation*.

4.1.2.5.4.4 Significance of Impact After Mitigation

As indicated above, no mitigation is required to address the potential for the Project to result in incremental acute non-cancer health hazards. The proposed Project would result in a ***less than significant impact*** for construction and operations.

4.1.2.5.5 Impact 4.1.2-5

Summary Conclusion for Impact 4.1.2-5: The proposed Project would not result in an exceedance of Permissible Exposure Limits - Time Weighted Average or Threshold Limit Values for workers. This would be a *less than significant impact* for construction and operations.



Legend

- LAX Property Boundary
- MEI Resident Acute Hazard
- MEI Off-Airport Worker Acute Hazard
- Commercial
- On-Airport Commercial
- On-Airport Construction, Commercial
- Residential
- Residential/Commercial
- Interstate Highway
- California State Highway

Notes:
1. Grid points indicate locations where receptors were evaluated for the operations scenario. Receptor types are identified in the legend.
2. Acute non-cancer hazard index threshold is 1. None of the acute non-cancer hazard indices exceed this threshold. Only the maximum incremental non-cancer hazard index is shown on this figure.

0 0.5 1 Miles
Scale

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, August 2020
Prepared by: CDM Smith, October 2020

LAX Airfield and Terminal Modernization Project

Peak Incremental Acute Hazard Locations - Operations
(2028 Future Without Project Compared to 2018 Baseline)

Figure
4.1.2-10

4.1.2.5.5.1 Construction

On-airport worker health hazards for the proposed Project were evaluated by comparing modeled on-airport maximum 8-hour concentrations for each TAC during its peak year of construction (peak year is 2023 for all TAC, except barium, which peaks in 2024), against the corresponding Cal/OSHA PEL. On-airport worker health hazards were assessed at 13 on-airport locations located at the airfield-facing ends of each terminal and at the Midfield Satellite Concourse. These receptors are being evaluated for occupational health only as they are neither ambient air, nor peak impact areas. As shown in **Table 4.1.2-10**, construction of the proposed Project would result in on-airport concentrations of TAC less than the respective Cal/OSHA PEL for all TAC. Impacts from TAC concentrations during proposed Project construction would be ***less than significant*** for on-airport workers.

Table 4.1.2-10
Comparison of Peak On-Airport Worker TAC Concentrations During With Project Construction Against Cal/OSHA PEL

Toxic Air Contaminant (TAC)	Cal/OSHA PEL[1] (ug/m^3)	Maximum 8-hour On-Airport TAC Concentration[2] (ug/m^3)	Exceeds PEL?
1,2,4-Trimethylbenzene	125,000	0.08[4]	No
1,3-Butadiene	2,200	0.2[4]	No
2,2,4-Trimethylpentane	NA	0.03[3]	No
Acetaldehyde	45,000	1.0[4]	No
Acrolein	250	0.3[4]	No
Benzene	3,190	0.4[4]	No
Cumene	245,000	0.001[4]	No
Cyclohexane	1,050,000	0.003[3]	No
Ethyl benzene	22,000	0.07[4]	No
Formaldehyde	922	2.5[4]	No
Hexane	180,000	0.02[3]	No
Isoprene, except from vegetative emission sources	NA	0.0002[5]	No
Methanol	260,000	0.2[4]	No
Methyl Ethyl Ketone (2-butanone)	590,000	0.1[3]	No
Naphthalene	500	0.07[4]	No
Propionaldehyde	NA	0.2[4]	No
Propylene	NA	0.7[4]	No
Styrene	215,000	0.04[4]	No
Toluene	37,000	0.3[4]	No
Xylenes	435,000	0.2	No
Aluminum	2,000	0.6[3]	No
Ammonium	18,000	0.006[3]	No
Antimony	500	0.0002[3]	No
Arsenic	10	0.0002[3]	No
Barium	500	0.03[5]	No

Table 4.1.2-10
Comparison of Peak On-Airport Worker TAC Concentrations During With Project Construction Against Cal/OSHA PEL

Toxic Air Contaminant (TAC)	Cal/OSHA PEL[1] (ug/m^3)	Maximum 8-hour On-Airport TAC Concentration[2] (ug/m^3)	Exceeds PEL?
Bromine	700	0.0003[3]	No
Cadmium	5	0.0003[3]	No
Chlorine	1,500	0.03[3]	No
Chromium	5	0.002[3]	No
Cobalt	20	0.0008[3]	No
Copper	100	0.007[5]	No
Lead	50	0.004[3]	No
Manganese	200	0.007[3]	No
Mercury	25	0.0002[3]	No
Nickel	500	0.0007[5]	No
Phosphorus	100	0.01[3]	No
Selenium	200	0.00006[3]	No
Silicon	5,000	1.4[3]	No
Silver	10	0.0001[3]	No
Sulfates	NA	0.07[3]	No
Vanadium (fume or dust)	50	0.002[3]	No
Zinc	NA	0.01[3]	No

Source: **Appendix C.6** of this EIR.

Notes:
[1] Cal/OSHA PEL are permittable exposure levels for chemical contaminants for workers as detailed in the California Code of Regulations, Title 8, Section 5155, Airborne Contaminants.
[2] Listed on-airport maximum 8-hour concentrations during peak year of construction are from 2021.
[3] Listed on-airport maximum 8-hour concentrations during peak year of construction are from 2022.
[4] Listed on-airport maximum 8-hour concentrations during peak year of construction are from 2023.
[5] Listed on-airport maximum 8-hour concentrations during peak year of construction are from 2024.

Key:
NA = Not available; NV = No value; PEL = Permissible Exposure Limit; µg/m3 Micrograms per Cubic Meter

4.1.2.5.5.2 Operations

On-airport worker health hazards for the proposed Project were evaluated by comparing modeled on-airport maximum 8-hour concentrations for each TAC during 2028 operations, against the corresponding Cal/OSHA PEL. On-airport worker health hazards were assessed at 11 on-airport locations. As shown in **Table 4.1.2-11**, operation of the proposed Project would result in on-airport concentrations of TAC less than the respective Cal/OSHA PEL for all TAC. Impacts from TAC concentrations during proposed Project operation would be ***less than significant*** for on-airport workers.

Table 4.1.2-11
Comparison of Peak On-Airport Worker TAC Concentrations During With Project Operations Against Cal/OSHA PEL

Toxic Air Contaminant (TAC)	Cal/OSHA PEL[1] (ug/m^3)	Maximum 8-hour On-Airport TAC Concentration (ug/m^3)	Exceeds PEL?
1,2,4-Trimethylbenzene	125,000	1.4	No
1,3-Butadiene	2,200	3.3	No
2,2,4-Trimethylpentane	NA	0.7	No
Acetaldehyde	45,000	11.1	No
Acrolein	250	4.6	No
Benzene	3,190	4.6	No
Cumene	245,000	0.01	No
Cyclohexane	1,050,000	0.06	No
Ethyl benzene	22,000	0.6	No
Formaldehyde	922	29.4	No
Hexane	180,000	0.2	No
Isoprene, except from vegetative emission sources	NA	0.01	No
Methanol	260,000	3.4	No
Methyl ethyl Ketone (2-butanone)	590,000	0.6	No
Naphthalene	500	1.1	No
Propionaldehyde	NA	1.8	No
Propylene	NA	9.9	No
Styrene	215,000	0.6	No
Toluene	37,000	2.5	No
Xylenes	435,000	0.5	No
Aluminum	2,000	0.003	No
Ammonium	18,000	0.007	No
Antimony	500	0.00007	No
Arsenic	10	0.00006	No
Barium	500	0.3	No
Bromine	700	0.002	No
Cadmium	5	0.00008	No
Chlorine	1,500	0.2	No
Chromium	5	0.0004	No
Cobalt	20	0.001	No
Copper	100	0.06	No
Lead	50	0.001	No

Table 4.1.2-11
Comparison of Peak On-Airport Worker TAC Concentrations During With Project Operations Against Cal/OSHA PEL

Toxic Air Contaminant (TAC)	Cal/OSHA PEL[1] (ug/m^3)	Maximum 8-hour On-Airport TAC Concentration (ug/m^3)	Exceeds PEL?
Manganese	200	0.01	No
Mercury	25	0.00006	No
Nickel	500	0.005	No
Phosphorus	100	0.002	No
Selenium	200	0.0001	No
Silicon	5,000	0.3	No
Silver	10	0.00006	No
Sulfates	NA	1.4	No
Vanadium (fume or dust)	50	0.003	No
Zinc	NA	0.009	No

Source: **Appendix C.6** of this EIR.

Note:
[1] Cal/OSHA PEL are permittable exposure levels for chemical contaminants for workers as detailed in the California Code of Regulations, Title 8, Section 5155, Airborne Contaminants.

Key:
PEL = Permissible Exposure Limit; µg/m3 Micrograms per Cubic Meter

4.1.2.5.5.3 Mitigation Measures

Because the proposed Project would result in a ***less than significant impact*** related to an exceedance of Permissible Exposure Limits - Time Weighted Average or Threshold Limit Values for workers, no mitigation is required for construction or operations. However, it should be noted that mitigation measures that are recommended to reduce air pollutant emissions, greenhouse gas emissions, and transportation impacts would also reduce human health risk impacts. Such measures that address construction impacts are Mitigation Measures MM-AQ/GHG (ATMP)-1 and 2, described in Section 4.1.1, *Air Quality.* Such measures that address operational impacts are Mitigation Measures MM-AQ/GHG (ATMP)-5 described in Section 4.1.1, *Air Quality;* MM GHG (ATMP)-3, described in Section 4.4, *Greenhouse Gas Emissions*; and MM-TR (ATMP)-1, described in Section 4.8, *Transportation*.

4.1.2.5.5.4 Significance of Impact After Mitigation

As indicated above, no mitigation is required to address the potential for the Project to result in an exceedance of Permissible Exposure Limits - Time Weighted Average or Threshold Limit Values for workers. The proposed Project would result in a ***less than significant impact*** for construction and operations.

4.1.2.5.6 Human Health Risk Assessment (HHRA) Summary

The purpose of the HHRA is to address potential human health impacts from inhalation of TAC caused by construction and operation of the proposed Project, including both cancer risks and acute (short-term) and chronic (long-term) non-cancer health hazards. Risk assessment is an evolving and highly uncertain process. Large uncertainties exist in emission estimates and dispersion modeling, evaluation of sensitive receptor populations, exposure parameter assumptions, toxicity assessment, the assumptions inherent in the 2015 OEHHA Air Toxics Methodology, and interactions among acrolein and criteria pollutants.[37] This HHRA relied upon the data and methods based on the current state of the science.

Although the proposed Project itself would not result in any changes to future aviation activity levels projected for LAX at build-out, the modifications and additions to the airfield, terminals, and ground access facilities would alter the locations and amounts of TAC released by aircraft, GSE, vehicles, and stationary sources in ways that could result in impacts on human health during both construction and operation of the proposed Project. In addition, construction of the proposed improvements and associated construction equipment would release TAC. Potential impacts to human health associated with releases of TAC may include increased cancer risks and increased acute and chronic non-cancer health hazards from inhalation of TAC.

Although no regulations exist that establish thresholds of significance for an entire facility like LAX, LAWA has developed human health risk assessment significance thresholds based on recent SCAQMD policies. The significance thresholds used in the analysis represent a best effort to understand and evaluate the potential impacts to human health in terms of cancer risk to workers, residents and children within the study area, cancer burden (evaluation of population-wide cancer risk), chronic non-cancer health hazards, acute non-cancer health hazards, and the potential for criteria pollutants to exceed established exposure concentrations. The specific impact thresholds are described in detail in Section 4.1.2.4.

The primary findings of the health risk assessment are as follows:

- The incremental cancer risks for both construction and operations for off-airport workers would be higher than 2018 baseline conditions but would be less than the significance threshold of 10 in 1 million.
- The incremental cancer risks for both construction and operations for adult residents (70- and 30-year exposure), child residents, and school children would be negative when compared to baseline conditions, and thus beneficial. Because of these negative impacts, the calculated cancer burden would similarly be negative. Impacts would be less than the respective significance thresholds.
- The incremental chronic non-cancer health hazards for both residents and workers would be greater than baseline conditions during both construction and operations. However, impacts would be less than the significance threshold.
- The incremental acute non-cancer health hazards for both residents and workers would be greater than baseline conditions during both construction and operations but would be less than the significance threshold.
- On-airport worker health hazards for the proposed Project were compared to the Cal/OSHA PEL during the peak year of construction and during operations. Estimated 8-hour concentrations of each TAC were found to be less than the Cal/OSHA PEL in all cases and would be less than significant.

[37] California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, *Air Toxics Hot Spots Program, Risk Assessment Guidelines, Guidance Manual for Preparation of Health Risk Assessments*, February 2015. Available: https://oehha.ca.gov/air/crnr/notice-adoption-air-toxics-hot-spots-program-guidance-manual-preparation-health-risk-0.

- The cumulative cancer risk from the proposed Project would slightly increase, amounting to approximately 1 percent of the cancer risk in the South Coast Air Basin and would not add substantially to the already high regional cumulative cancer risk in the South Coast Air Basin.
- Cumulative non-cancer hazards (chronic and acute) could only be evaluated semi-quantitatively because of substantial uncertainties associated with the USEPA predictions for TAC emissions and concentrations. However, because of the relatively small hazard indices associated with the proposed Project emissions, the proposed Project is not expected to add significantly to cumulative acute and chronic health hazards.

4.1.2.6 Cumulative Impacts

Although air quality has established standards that determine acceptable levels of pollutant concentrations, no USEPA standards exist that establish acceptable levels of human health risks or that identify a threshold of significance for cumulative health risk impacts. Therefore, while the discussion below addresses cumulative health risk impacts, and Project-related contributions to those impacts; no determination is made regarding the significance of cumulative impacts. Since these results are not used for significance determination, a general discussion of the cumulative impacts for the proposed Project is provided. Based on information available from the SCAQMD and USEPA, the geographic areas considered in the cumulative health risk impacts analysis include the South Coast Air Basin for cancer risk and the LAX area for non-cancer health hazards.

4.1.2.6.1 Cancer Risks

As noted in Section 4.1.2.3.2, according to MATES-IV,[38] cancer risks in the South Coast Air Basin range from 320 in 1 million to 480 in 1 million, with an average of 418 in 1 million. These cancer risk estimates are high and indicate that current impacts associated with ongoing releases of TAC (e.g., from vehicle exhaust) and from sources of TAC from past and present projects in the region are substantial. Although the MATES-IV study is an appropriate estimate of present cumulative impacts of TAC emissions in the South Coast Air Basin, it does not have sufficient resolution to determine the fractional contribution of current LAX operations to TAC in the airshed. Only possible incremental contributions to cumulative impacts can be assessed. Meaningful quantification of future cumulative health risk exposure in the entire South Coast Air Basin is not possible. Moreover, the threshold of significance used to determine cancer risk impacts is based on cancer risks associated with individual projects and this threshold cannot be applied to conclusions regarding cumulative cancer risks.

Based on the relatively high cancer risk level associated with TAC in air in the South Coast Air Basin, the proposed Project off-airport worker risk would amount to approximately 1 percent of the cancer risk in the South Coast Air Basin and would not add substantially to the already high cumulative cancer risk. Neither this small increase estimated for off-airport workers, nor the risk decreases estimated for residents, would be measurable in collected cancer statistics against urban background conditions in the South Coast Air Basin.

The above comparisons do not account for possible positive changes in air quality in the South Coast Air Basin in the future. SCAQMD and other agencies are consistently working to reduce air pollution. In particular, reductions in emissions of diesel particulates are being considered and implemented. Since DPM is the major contributor to estimated cancer risks, substantial reductions in diesel emissions would result in substantial reductions in cumulative cancer risks. These, and other such regulations intended to reduce TAC emissions within the South Coast Air Basin, would reduce cumulative impacts overall.

[38] South Coast Air Quality Management District, *Final Report – Multiple Air Toxics Exposure Study in the South Coast Air Basin – MATES-IV*, May 2015. Available: http://www.aqmd.gov/docs/default-source/air-quality/air-toxic-studies/mates-iv/mates-iv-final-draft-report-4-1-15.pdf?sfvrsn=7.

Continued, if not increased, regulation by the SCAQMD of point sources, as well as more stringent emission controls on mobile sources, would reduce TAC emissions; whether such measures would alter incremental contributions of TAC releases to cumulative impacts under the proposed Project cannot be ascertained.

4.1.2.6.2 Chronic Non-Cancer Hazards

For the proposed Project, chronic non-cancer health hazards are primarily attributable to acrolein, DPM, and chlorine, and to a lesser extent silicon, formaldehyde, and 1,3-butadiene. In 2018, USEPA[39] published an independent study that included annual average air concentrations within the South Coast Air Basin associated with a variety of TAC, including acrolein, chlorine, and DPM. These estimates provide a means for assessing cumulative chronic non-cancer health hazard impacts of airport operations in much the same manner as cumulative cancer risks were assessed using the MATES-IV results.

Within the study area, USEPA predictions for annual average concentrations yield acrolein hazard quotients by census tract ranging from 0.1 to 0.5, with an average of 0.2; DPM hazard indices range from 0.05 to 0.09, with an average of 0.07; and chlorine hazard indices range from 0.05 to 0.08, with an average of 0.07. Incremental chronic non-cancer hazard indices for the proposed Project were estimated to range from 0.02 to 0.3, all below the threshold of significance of one. Given the relatively small hazard indices associated with proposed Project emissions, the proposed Project is not expected to add significantly to cumulative chronic non-cancer health hazards.

Because of the substantial uncertainties associated with the USEPA estimates, the cumulative analysis for chronic non-cancer health hazard impacts is semi-quantitative and based on a range of possible contributions. This cumulative analysis does not address the issue of potential interactions among acrolein and criteria pollutants. Such interactions cannot, at this time, be addressed in a quantitative fashion. A qualitative discussion of the issue is presented in the LAX Master Plan Final EIR[40] Technical Report S-9a, Section 7.

As discussed in the LAX Master Plan Final EIR[41] (Section 4.24.1.2), limited data are available for describing regional acrolein emissions. Therefore, estimates of chronic non-cancer health hazards are very uncertain. Chronic non-cancer health hazards associated with the proposed Project should only be used to provide a relative comparison to basin-wide conditions. These hazards should not be viewed as absolute estimates of potential health impacts. Moreover, USEPA's estimates are based on data from 2014 and are therefore several years old. Emissions from some important sources may have been reduced as a result of continuing efforts by SCAQMD and other agencies to improve air quality in the South Coast Air Basin. Finally, the estimates do not consider degradation of TAC in the atmosphere. Degradation may be very important for relatively reactive chemicals such as acrolein.

4.1.2.6.3 Acute Non-Cancer Hazards

Acrolein, formaldehyde, and manganese are the primary TAC of concern in proposed Project construction emissions that might be present at concentrations approaching the threshold for acute non-cancer health

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39 U.S. Environmental Protection Agency, *2014 National Air Toxics Assessment*, 2018. Available: https://www.epa.gov/national-air-toxics-assessment/2014-nata-assessment-results, accessed February 5, 2020.

40 City of Los Angeles, Los Angeles World Airports, *Final Environmental Impact Report for Los Angeles International Airport (LAX) Proposed Master Plan Improvements*, (SCH 1997061047), Technical Report 14a, Health Risk Assessment, and Technical Report S-9a, Supplemental Health Risk Assessment*, April 2004. Available:* https://www.lawa.org/en/lawa-our-lax/environmental-documents/documents-certified/2004-lax-master-plan-program/final-environmental-impact-report-feir.

41 City of Los Angeles, Los Angeles World Airports, *Final Environmental Impact Report for Los Angeles International Airport (LAX) Proposed Master Plan Improvements,* (SCH 1997061047), Section 4.24.1, Human Health Risk Assessment, Technical Report 14a, Health Risk Assessment, and Technical Report S-9a, Supplemental Health Risk Assessment, April 2004. Available: https://www.lawa.org/en/lawa-our-lax/environmental-documents/documents-certified/2004-lax-master-plan-program/final-environmental-impact-report-feir.

hazards. The primary TAC of concern in proposed Project operations emissions for acute non-cancer hazards is acrolein. Predicted concentrations of TAC released from both construction activities and operations for the proposed Project estimate that acute non-cancer health hazards are below the significance threshold of 1.

The assessment of cumulative acute non-cancer health hazards follows the methods used to evaluate cumulative acute non-cancer health hazards presented in the LAX Master Plan Final EIR[42] (Section 4.24.1.7 and Technical Report S-9a, Section 6.3), incorporating updated National-Scale Air Toxics Assessment (NATA)[43] tables from 2014. USEPA-modeled emission estimates by census tract were used to estimate annual average ambient air concentrations. These census tract emission estimates are subject to high uncertainty, thus, for the analysis of cumulative acute non-cancer health hazards, estimates for each census tract within the study area within Los Angeles County were identified and the range of concentrations was used as an estimate of the possible range of annual average concentrations.

This range of concentrations was used to estimate a range of acute non-cancer hazard indices within the study area using the same methods as described in the LAX Master Plan Final EIR[44] (Section 4.24.1.7 and Technical Report S-9a, Section 6.1). The methodology entails converting the USEPA annual average estimates to maximum 1-hour average concentrations and then calculating the acute non-cancer hazard indices. The range of hazard indices was then used as a basis for comparison with estimated maximum acute non-cancer health hazards for the proposed Project. The relative magnitude of acute non-cancer health hazards calculated using this method were taken as a general measure of relative cumulative impacts.

When USEPA annual average estimates within the HHRA study area are converted to possible maximum 1-hour average concentrations, acrolein acute non-cancer hazard indices are estimated to range from 0.2 to 0.8, with an average of 0.4; formaldehyde acute non-cancer hazard indices are estimated to range from 0.3 to 0.5, with an average of 0.4; and manganese acute non-cancer hazard indices are estimated to range from 0.08 to 0.2, with an average of 0.1. Predicted overall maximum incremental acute non-cancer health hazards for the proposed Project from construction and operations ranged from 0.1 to 0.4 for acrolein; from 0.04 to 0.1 for formaldehyde; and from 0.02 to 0.1 for manganese. The target organ for manganese is the nervous system, while the target organ for formaldehyde and acrolein is the eyes. Thus, the hazard quotient for manganese would not be summed with the hazard quotients for formaldehyde and acrolein in an organ system breakdown of the hazard index. With the resulting hazard indices being below 1, this analysis indicates that the acute non-cancer health hazards for the proposed Project would not be cumulatively considerable.

4.1.2.6.4 Summary of Cumulative Impacts

Although no defined thresholds for cumulative health risk impacts are available, it is the policy of the SCAQMD to use the same significance thresholds for cumulative impacts as for the project-specific impacts analyzed in the EIR. Based on this policy, the proposed Project's contribution to the cumulative cancer risk would not be cumulatively considerable under the construction and operation scenarios since

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42 City of Los Angeles, Los Angeles World Airports, *Final Environmental Impact Report for Los Angeles International Airport (LAX) Proposed Master Plan Improvements*, (SCH 1997061047), Section 4.24.1, Human Health Risk Assessment, Technical Report 14a, Health Risk Assessment, and Technical Report S-9a, Supplemental Health Risk Assessment, April 2004. Available: https://www.lawa.org/en/lawa-our-lax/environmental-documents/documents-certified/2004-lax-master-plan-program/final-environmental-impact-report-feir.

43 U.S. Environmental Protection Agency, *2014 National Air Toxics Assessment*, 2018. Available: https://www.epa.gov/national-air-toxics-assessment/2014-nata-assessment-results, accessed February 5, 2020.

44 City of Los Angeles, Los Angeles World Airports, *Final Environmental Impact Report for Los Angeles International Airport (LAX) Proposed Master Plan Improvements*, (SCH 1997061047), Section 4.24.1, Human Health Risk Assessment, Technical Report 14a, Health Risk Assessment, and Technical Report S-9a, Supplemental Health Risk Assessment, April 2004. Available: https://www.lawa.org/en/lawa-our-lax/environmental-documents/documents-certified/2004-lax-master-plan-program/final-environmental-impact-report-feir.

the incremental cancer risk impacts for both construction and operation for evaluated receptors would be below the individual cancer risk significance thresholds of 10 in one million.

In contrast to cancer risk, the SCAQMD policy does have different significance thresholds for project-specific and cumulative impacts for hazard indices for TAC emissions. A project-specific significance threshold is one (1.0) while the cumulative threshold is 3.0. Based on this SCAQMD policy, chronic and acute non-cancer hazard indices associated with airport emissions for both construction and operation under the proposed Project would not be cumulatively considerable.

4.1.2.7 Summary of Impact Determinations

Table 4.1.2-12 summarizes the impact determinations of the proposed Project related to human health risk, as described above in Sections 4.1.2.5 and 4.1.2.6. Impact determinations are based on the significance criteria presented in Section 4.1.2.4, and the information and data sources cited throughout Section 4.1.2.

Table 4.1.2-12
Summary of Impacts and Mitigation Measures Associated with the Proposed Project Related to Human Health Risk

Environmental Impacts	Impact Determination	Mitigation Measures	Level of Significance After Mitigation
Impact 4.1.2-1: The proposed Project would not increase incremental cancer risk greater than, or equal to, 10 in 1 million (10 x 10-6) for potentially exposed off-airport workers, residents, or school children. This would be a ***less than significant impact*** for construction and operations.	Construction: Less than Significant Operations: Less than Significant	Construction: No mitigation is required Operations: No mitigation is required	Construction: Less than Significant Operations: Less than Significant
Impact 4.1.2-2: The proposed Project would not result in a cancer burden greater than, or equal to 0.5 excess cancer cases in areas within the greater than 1 in 1 million zone of impact. This would be a ***less than significant impact*** for construction and operations.	Construction: Less than Significant Operations: Less than Significant	Construction: No mitigation is required Operations: No mitigation is required	Construction: Less than Significant Operations: Less than Significant
Impact 4.1.2-3: The proposed Project would not result in a total incremental chronic hazard index (HI) greater than, or equal to, 1 for any target organ system at any receptor location. This would be a ***less than significant impact*** for construction and operations.	Construction: Less than Significant Operations: Less than Significant	Construction: No mitigation is required Operations: No mitigation is required	Construction: Less than Significant Operations: Less than Significant
Impact 4.1.2-4: The proposed Project would not result in a total incremental acute HI greater than, or equal to, 1 for any target organ system at any receptor location. This would be a ***less than significant impact*** for construction and operations.	Construction: Less than Significant Operations: Less than Significant	Construction: No mitigation is required Operations: No mitigation is required	Construction: Less than Significant Operations: Less than Significant

Table 4.1.2-12
Summary of Impacts and Mitigation Measures Associated with the Proposed Project Related to Human Health Risk

Environmental Impacts	Impact Determination	Mitigation Measures	Level of Significance After Mitigation
Impact 4.1.2-5: The proposed Project would not result in an exceedance of Permissible Exposure Limits - Time Weighted Average or Threshold Limit Values for workers. This would be a ***less than significant impact*** for construction and operations.	Construction: Less than Significant Operations: Less than Significant	Construction: No mitigation is required Operations: No mitigation is required	Construction: Less than Significant Operations: Less than Significant

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4.2 Cultural Resources (Historical Resources)

4.2.1 Introduction

This cultural resources section addresses the proposed Project's impacts on historical resources. The existing historical resources in the vicinity of the proposed Project are described below, along with the methodology and the regulatory framework that guided the evaluation of historical resources. Impacts to historical resources that would result from the proposed Project are identified, along with any measures to mitigate significant effects of the proposed Project, if needed. This section is based in part on more comprehensive information contained in **Appendix D**.

Section 4.7.3, *Construction Traffic and Equipment Noise and Vibration*, of this EIR addresses the potential for construction-related vibration to adversely affect historical resources located in proximity to the proposed construction activities. As demonstrated in that section, vibration-related impacts on nearby historical resources would be less than significant.

Prior to the preparation of this EIR, an Initial Study (included as **Appendix A** of this EIR) was prepared using the CEQA Environmental Checklist Form to assess potential environmental impacts to cultural resources. For two of these screening criteria, the Initial Study found that the proposed Project would result in a "Less Than Significant Impact" and, thus, no further analysis of these topics in an EIR was required. Based on the Initial Study screening criteria related to cultural resources, the following potential impacts do not require any additional analysis in this EIR:

- Potential impacts on archaeological resources were evaluated and determined to have a less than significant impact in the Initial Study. Results of the records search conducted between 2014 and 2015 for the LAX Landside Access Modernization Program from the South Central Coastal Information Center indicated no archaeological resources have been recorded at the Project site or within the immediate vicinity.[1] Further, the Project improvement sites consist of highly disturbed areas that have long been, and are currently being, used for airport and other highly developed uses. Any resources that may have existed on the improvement sites at one time are likely to have been displaced and, as a result, the overall sensitivity of the sites with respect to buried resources is low. LAWA has developed and adopted plans, policies, and procedures that address potential impacts to archaeological resources, which are documented in LAWA's Archaeological Treatment Plan ATP.[2] LAWA requires all construction projects at LAX to comply with the ATP and will apply this requirement to the proposed Project as part of LAWA's general construction contract specifications and tenant agreements related to new construction. With implementation of the ATP, monitoring for the presence of previously-unknown archaeological resources would occur during construction, when warranted, and discoveries of archaeological resources would be handled in accordance with the ATP and with all applicable laws and regulations. As a result, impacts of the proposed Project on archaeological resources would be less than significant and no further evaluation in this EIR is required.

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[1] The study area for the archaeological resources assessment for the LAX Landside Access Modernization Program included areas within and to the east of the CTA, as well as within the northern and western portions of the airport property, some of which are adjacent to the Project site; refer to Figure 2 in City of Los Angeles, Los Angeles World Airports, *Final Environmental Impact Report for Los Angeles International Airport (LAX) Landside Access Modernization Program,* (SCH 2015021014), Appendix I - Archaeological and Paleontological Resources Assessment Report, prepared by PCR Services Corporation, September 2016.

[2] City of Los Angeles, Los Angeles World Airports, *Final LAX Master Plan Mitigation Monitoring & Reporting* Program*: Archaeological Treatment Plan*, prepared by Brian F. Smith and Associates. June 2005. Available: https://www.lawa.org/-/media/lawa-web/lawa-our-lax/studies-and-reports/mitigation-monitoring/archaeological_treatment_plan.ashx?la=en&hash=9833B1960E1AE662518B5517DB42CA42F55FAE0E.

- Potential impacts on human remains, including those interred outside of dedicated cemeteries, were evaluated and determined to have a less than significant impact in the Initial Study. Based on discussions with a representative of the Gabrielino Tongva Indians of California Tribal Council, there is no information to suggest that there are known tribal human remains that would be affected by the proposed Project.[3] As stated above, the Project site is located within a highly urbanized area and has been subject to disturbance by airport operations and development. Thus, surficial human remains resources that may have existed at one time have likely been displaced by these disturbances. While discovery of human remains in artificial fill deposits within the Project site is unlikely, proposed excavations could impact previously unknown buried human remains. However, LAWA would comply with existing guidance as to the treatment of any human remains that are encountered during construction excavations, including the procedures outlined in Sections 7050.5(b) and (c) of the State Health and Safety Code, and Sections 5097.94(k) and (i) and Sections 5097.98(a) and (b) of the Public Resources Code. Through compliance with state and local regulations, disturbance of any human remains, including those interred outside of formal or dedicated cemeteries, would be less than significant and no further evaluation in this EIR is required.

In accordance with Assembly Bill 52, Appendix G of the State CEQA Guidelines identifies tribal cultural resources as a separate resource from other cultural resources. Based on the analysis in the Initial Study, (**Appendix A** of this EIR), and for reasons described in Section XVIII therein, the potential for the proposed Project to cause a substantial adverse change in the significance of a tribal cultural resource was determined to be less than significant and this topic does not require any additional analysis in this EIR. However, subsequent to LAWA's publication of the CEQA Notice of Preparation/Initial Study for the proposed Project in April 2019, as part of the separate government-to-government consultation between the FAA and Tribal governments during preparation of the Environmental Assessment under the National Environmental Policy Act (NEPA) for the proposed Project, the Gabrielino Band of Mission Indians – Kizh Nation expressed concerns to FAA regarding potential impacts to Tribal resources that could be discovered during excavation and construction of the LAX Airfield and Terminal Modernization Project. In response to these concerns and at the request of FAA, LAWA agreed to implement the following measures prior to initiation of Project-related grading or excavation activities to ensure the expertise of the local tribal monitor is respected:

- LAWA would consult with a Tribal monitor to determine if an action is subject to archaeological and tribal monitoring, which would be determined based on specific design information, information on the depth of fill and soil disturbance, and the probability of encountering cultural or archaeological resources.
- LAWA would require the construction contractor to have a Tribal monitor present during excavation/ground disturbance activities for any areas that have a medium to high probability of containing undisturbed soils determined by the depth of the ground disturbing activities.
- The Tribal monitor must be approved by the Gabrieleno Band of Mission Indians – Kizh Nation Tribal Government and be listed under the Native American Heritage Commission's (NAHC) Tribal Contact list for the LAX area.
- The Tribal monitor would work independently from any other cultural resource monitor for each element of the proposed Project to monitor ground disturbing activities identified at Project initiation to have the potential for encountering archaeological resources in undisturbed soils.

[3] Dorame, Robert, Chairman, Gabrielino Tongva Indians of California Tribal Council, *Personal Communication*, March 7, 2019.

- Upon discovery of any Tribal Cultural Resources, construction activities would cease in the immediate vicinity of the find until the find can be assessed and, if the resources are Native American in origin, previously-agreed-upon procedures for handling the find would be implemented.

4.2.2 Methodology

A historic resources assessment was performed for the proposed Project by Historic Resources Group (HRG) personnel who meet the Secretary of the Interior's Professional Qualification Standards in the disciplines of architectural history and history (see **Appendix D**). Historical resources considered include prehistoric or historic buildings, sites, districts, structures, or objects that meet criteria of significance as established by the National Register of Historic Places (National Register), California Register of Historical Resources (California Register), and local jurisdictions. Their evaluation of historic significance was based on a review of existing historic designations, research of the relevant historic contexts, and analysis of the eligibility criteria and integrity thresholds for listing in the National Register, California Register, or as a City of Los Angeles Historic-Cultural Monument. The historical resources assessment utilized a two-step methodology involving research and field investigation.

The research component of the assessment used primary and secondary sources related to the development history of LAX and its immediate surrounding area. Sources included historic building permits, photographs, aerial photographs, and site plans; published local histories; previous environmental review documents and historic resources evaluations for LAX; California State Historic Resources Inventory (HRI) for Los Angeles County; California Department of Parks and Recreation HRI Forms; and applicable results from SurveyLA, the City of Los Angeles' comprehensive historic resources survey now ongoing.

HRG performed on-site inspections in 2015 of property owned by LAWA. Their fieldwork focused on confirming previous findings relating to historical resources associated with the LAX Landside Access Modernization Program and identifying any additional potential historical resources (see **Appendix D**).

4.2.3 Existing Conditions

4.2.3.1 Regulatory Setting

Historical resources fall within the jurisdiction of several levels of government. Federal laws provide the framework for the identification and, in certain instances, protection of historical resources. Additionally, state and local jurisdictions play active roles in the identification, documentation, and protection of such resources within their communities. The National Historic Preservation Act of 1966, as amended (NHPA; 54 United States Code 300101 et seq.); CEQA; California Register of Historical Resources (Public Resources Code 5024.1); and the City of Los Angeles Cultural Heritage Ordinance (Los Angeles Administrative Code, Section 22.171 et seq.) are the primary federal, state, and local laws governing and affecting preservation of historical resources of national, state, regional, and local significance.[4]

4.2.3.1.1 Federal

National Register

The National Register was established by the NHPA as "an authoritative guide to be used by federal, state, and local governments, private groups and citizens to identify the nation's cultural resources and to

[4] Los Angeles Administrative Code, Chapter 9, Division 22, Article 1, Section 22.171 et seq., *Cultural Heritage Ordinance*, effective April 2, 2007. Available: http://preservation.lacity.org/sites/default/files/Cultural%20Heritage%20Ordinance.pdf.

indicate what properties should be considered for protection from destruction or impairment."[5] The National Register recognizes properties that are significant at the national, state, and/or local levels. To be eligible for listing in the National Register, a resource must be significant in American history, architecture, archaeology, engineering, or culture. The National Register has established Criteria for Evaluation to determine the significance of a resource:

1. It is associated with events that have made a significant contribution to the broad patterns of our history
2. It is associated with the lives of persons significant in our past
3. It embodies the distinctive characteristics of a type, period, or method of construction or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction
4. It yields, or may be likely to yield, information important in prehistory or history[6]

Districts, sites, buildings, structures, and objects of potential significance that are at least 50 years in age must meet one or more of the above criteria. However, the National Register does not prohibit the consideration of properties less than 50 years in age whose exceptional contribution to the development of American history, architecture, archaeology, engineering, and culture can clearly be demonstrated. In addition to meeting the Criteria for Evaluation, a property must have integrity. "Integrity is the ability of a property to convey its significance."[7] According to National Register Bulletin 15, the National Register recognizes seven aspects or qualities that, in various combinations, define integrity. The seven factors that define integrity are location, design, setting, materials, workmanship, feeling, and association.

To retain historic integrity, a property will always possess several, and usually most, of these seven aspects. Thus, the retention of the specific aspects of integrity is paramount for a property to convey its significance.[8]

In assessing a property's integrity, the National Register criteria recognizes that properties change over time; therefore, it is not necessary for a property to retain all of its historic physical features or characteristics. The property must retain, however, the essential physical features that enable it to convey its historic identity.[9]

NHPA Section 106 Consultation

Section 106 of the NHPA requires federal agencies to take into account the effects of their "undertakings" on historic properties and afford the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment. The historic preservation review process mandated by Section 106 is implemented in ACHP regulations (36 Code of Federal Regulations Part 800). If it is determined that a project would have impacts on historic resources that are eligible for the National Register, the FAA would

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5 36 Code of Federal Regulations, Section 60.2, *Effects of Listing under Federal Law*.

6 U.S. Department of Interior, National Park Service, *National Register Bulletin 16, How to Complete the National Register Registration Form*, revised 1997. Available: https://www.nps.gov/subjects/nationalregister/upload/NRB16A-Complete.pdf. This bulletin contains technical information on comprehensive planning, survey of cultural resources, and registration in the National Register.

7 U.S. Department of Interior, National Park Service, *National Register Bulletin 15, How to Apply the National Register Criteria for Evaluation*, 1995, p. 44. Available: https://www.nps.gov/subjects/nationalregister/upload/NRB-15_web508.pdf.

8 U.S. Department of Interior, National Park Service, *National Register Bulletin 15, How to Apply the National Register Criteria for Evaluation*, 1995, p. 44. Available: https://www.nps.gov/subjects/nationalregister/upload/NRB-15_web508.pdf.

9 "A property retains association if it is the place where the event or activity occurred and is sufficiently intact to convey that relationship to an observer. Like feeling, association requires the presence of physical features that convey a property's historic character. Because feeling and association depend on individual perceptions, their retention alone is never sufficient to support eligibility of a property for the National Register." U.S. Department of Interior, National Park Service, *National Register Bulletin 15, How to Apply the National Register Criteria for Evaluation*, 1995, p. 46. Available: https://www.nps.gov/NR/PUBLICATIONS/bulletins/pdfs/nrb15.pdf.

be required to undertake Section 106 consultation, which includes consultation with the State Historic Preservation Officer (SHPO), before issuing federal approvals for the proposed Project.

Under Section 106 consultation, the federal agency first determines whether a proposed project is an undertaking that could affect historic properties. An undertaking is defined in Section 106 as a "project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a Federal agency, including those carried out by or on behalf of a Federal agency; those carried out with Federal financial assistance; and those requiring a Federal permit, license or approval." (36 CFR § 800.16(y).) Historic properties are properties that are included in the National Register or that meet the criteria for the National Register. (36 CFR § 800.16(l)(1).) If the agency's undertaking could affect historic properties, the agency determines the scope of appropriate identification efforts and then proceeds to identify historic properties in the area of potential effects (APE). The agency reviews background information, consults with SHPO, and conducts additional studies as necessary. Section 106 review gives equal consideration to listed properties and unlisted properties meeting National Register criteria.

If the federal agency finds that historic properties are present, it proceeds to assess possible adverse effects. The agency, in consultation with SHPO, makes an assessment of adverse effects on the identified historic properties. Adverse effects occur when an undertaking may directly or indirectly alter characteristics of a historic property that qualify it for inclusion in the National Register. Examples of adverse effects include physical destruction or damage; alteration not consistent with the Secretary of the Interior's Standards; relocation of a property; change of use or physical features of a property's setting; and visual, atmospheric, or audible intrusions. If a property is restored, rehabilitated, repaired, maintained, stabilized, remediated or otherwise changed in accordance with the Secretary of the Interior's Standards, then it will not be considered an adverse effect.

If the federal agency and SHPO agree that there would be no adverse effect, the agency proceeds with the undertaking and any agreed-upon conditions. If they find that there would be an adverse effect, the federal agency begins consultation to seek ways to avoid, minimize, or mitigate the adverse effects. The federal agency then consults with SHPO and other parties. The ACHP may participate in consultation in some circumstances. Consultation usually results in a Memorandum of Agreement, which outlines agreed-upon measures that the agency would take to avoid, minimize, or mitigate the adverse effects. In some cases, the consulting parties may agree that no such measures are possible, but that the adverse effects must be accepted in the public interest. The results of the Section 106 process would be presented in the Draft Environmental Assessment prepared in accordance with NEPA.

4.2.3.1.2 State

California Register and California Environmental Quality Act

The California Register was created by Assembly Bill 2881, which was signed into law on September 27, 1992. The California Register is "an authoritative listing and guide to be used by state and local agencies, private groups, and citizens in identifying the existing historical resources of the state and to indicate which resources deserve to be protected, to the extent prudent and feasible, from substantial adverse change."[10] The criteria for eligibility for the California Register are based on National Register criteria.[11] Certain resources are determined by the statute to be automatically included in the California Register, including California properties formally determined eligible for, or listed in, the National Register.[12] Per Instructions for Recording Historical Resources published by the California Department of Parks and Recreation, Office of Historic Preservation (OHP), physical evidence of

[10] California Public Resources Code, Section 5024.1(a).
[11] California Public Resources Code, Section 5024.1(b).
[12] California Public Resources Code, Section 5024.1(d).

human activities more than 45 years old may be recorded for purposes of inclusion in OHP's filing system although, similar to the National Register, resources less than 45 years old may also be filed.[13]

The California Register consists of resources that are listed automatically and those that must be nominated through an application and public hearing process. The California Register automatically includes the following:

- California properties listed on the National Register and those formally Determined Eligible for the National Register
- California Registered Historical Landmarks from No. 770 onward
- California Points of Historical Interest (CPHI) that have been evaluated by the OHP and have been recommended to the State Historical Commission for inclusion on the California Register[14]

Other resources that may be nominated to the California Register include:

- Individual historical resources
- Historical resources contributing to historic districts
- Historical resources identified as significant in historical resources surveys with significance ratings of Categories 1 through 5
- Historical resources designated or listed as local landmarks, or designated under any local ordinance, such as a historic preservation overlay zone[15]

To be eligible for the California Register, a historical resource must be significant at the local, state, or national level, under one or more of the following four criteria:

1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage
2. Is associated with the lives of persons important in our past
3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values
4. Has yielded, or may be likely to yield, information important in prehistory or history

Additionally, a historical resource must retain enough of its historic character or appearance to be recognizable as a historical resource and to convey the reasons for its significance.[16] Historical resources that have been rehabilitated or restored may be evaluated for listing. Integrity is evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling, and association. The resource must also be judged with reference to the particular criteria under which it is proposed for eligibility. It is possible that a historical resource may not retain sufficient integrity to meet the criteria for listing in the National Register but may still be eligible for listing in the California Register.[17]

Under CEQA, a project that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment.[18] This statutory standard involves a two-part inquiry. The first part is a determination of whether the project involves a historical resource. If it does, the inquiry addresses whether the project may cause a "substantial adverse change

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13 California Office of Historic Preservation, *Instructions for Recording Historical Resources,* March 1995.
14 California Public Resources Code, Section 5024.1(d).
15 California Public Resources Code, Section 5024.1(e).
16 14 California Code of Regulations, Chapter 11.5, Section 4852(c), *Types of Historical Resources and Criteria for Listing in the California Register of Historical Resources*.
17 14 California Code of Regulations, Chapter 11.5, Section 4852(c), *Types of Historical Resources and Criteria for Listing in the California Register of Historical Resources*.
18 California Public Resources Code, Section 21084.1.

in the significance" of the resource. State CEQA Guidelines Section 15064.5 provides that, for the purposes of CEQA compliance, the term "historical resources" shall include the following:[19]

- A resource listed in, or determined to be eligible by, the State Historical Resources Commission for listing in the California Register
- A resource included in a local register of historical resources, as defined in Section 5020.1(k) of the Public Resources Code or identified as significant in an historical resource survey meeting the requirements in Section 5024.1(g) of the Public Resources Code, shall be presumed to be historically or culturally significant. Public agencies must treat such resources as significant for purposes of CEQA unless the preponderance of evidence demonstrates that it is not historically or culturally significant.
- Any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be an historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource shall be considered by the lead agency to be "historically significant" if the resource meets one of the criteria for listing on the California Register.
- The fact that a resource is not listed in or determined to be eligible for listing in the California Register, not included in a local register of historical resources (pursuant to Section 5020.1(k) of the Public Resources Code), or identified in an historical resources survey (meeting the criteria in Section 5024.1(g) of the Public Resources Code) does not preclude a lead agency from determining that the resource may be an historical resource as defined in Public Resources Code Sections 5020.1(j) or 5024.1.

4.2.3.1.3 Local

City of Los Angeles Conservation Element of the General Plan

The Conservation Element includes provisions, policies, and objectives for the preservation and protection of historical sites. Chapter II, Section 5 of the City of Los Angeles General Plan Conservation Element (adopted 2001) contains the following objectives and policies applicable to the proposed Project:

Objective: Protect important cultural and historical sites and resources for historical, cultural, research, and community educational purposes.

- Policy: Continue to protect historic and cultural sites and/or resources potentially affected by proposed land development, demolition or property modification activities.

City of Los Angeles Cultural Heritage Ordinance

The City of Los Angeles enacted a Cultural Heritage Ordinance in April 1962 (Los Angeles Administrative Code, Section 22.130) that defines Los Angeles Historic-Cultural Monuments for the City. According to the ordinance, City of Los Angeles Historic-Cultural Monuments are sites, buildings, or structures of particular historical or cultural significance to the City of Los Angeles in which the broad cultural, economic, or social history of the nation, state, or community is reflected or exemplified, including sites and buildings associated with important personages or that embody certain distinguishing architectural characteristics and are associated with a notable architect. City of Los Angeles Historic-Cultural Monuments are regulated by the City's Cultural Heritage Commission and the City Council.

[19] 14 California Code of Regulations, Section 15064.5(a), *Determining the Significance of Impacts to Archaeological and Historical Resources*.

The City of Los Angeles Cultural Heritage Ordinance establishes criteria for designating local historical resources as City of Los Angeles Historic-Cultural Monuments. Pursuant to the Ordinance, a City of Los Angeles Historic-Cultural Monument is any site, building, or structure of particular historic or cultural significance to the City of Los Angeles that meets one or more of the following criteria:

1. Reflects or exemplifies the broad cultural, economic, or social history of the nation, state, or community
2. Is identified with historic personages or with important events in the main currents of national, state, or local history
3. Embodies the distinguishing characteristics of an architectural type specimen, inherently valuable for a study of a period, style, or method of construction
4. Is a notable work of a master builder, designer, or architect whose individual genius influenced his or her age

LAX Preservation Plan[20]

LAWA recognizes that LAX contains unique historic resources and is committed to preserving its historic resources in a methodical and thoughtful manner. To that end, LAWA has developed a Preservation Plan for LAX resources that identifies all historic resources on LAX property; identifies historic resources that LAWA commits to preserving; provides guidance on the rehabilitation of historic buildings, structures, objects, and sites located on LAX property; and creates a process for review of future projects with respect to historic resources. LAWA has committed to utilizing the LAX Preservation Plan to assist LAWA in preserving and evaluating its historic resources appropriately.

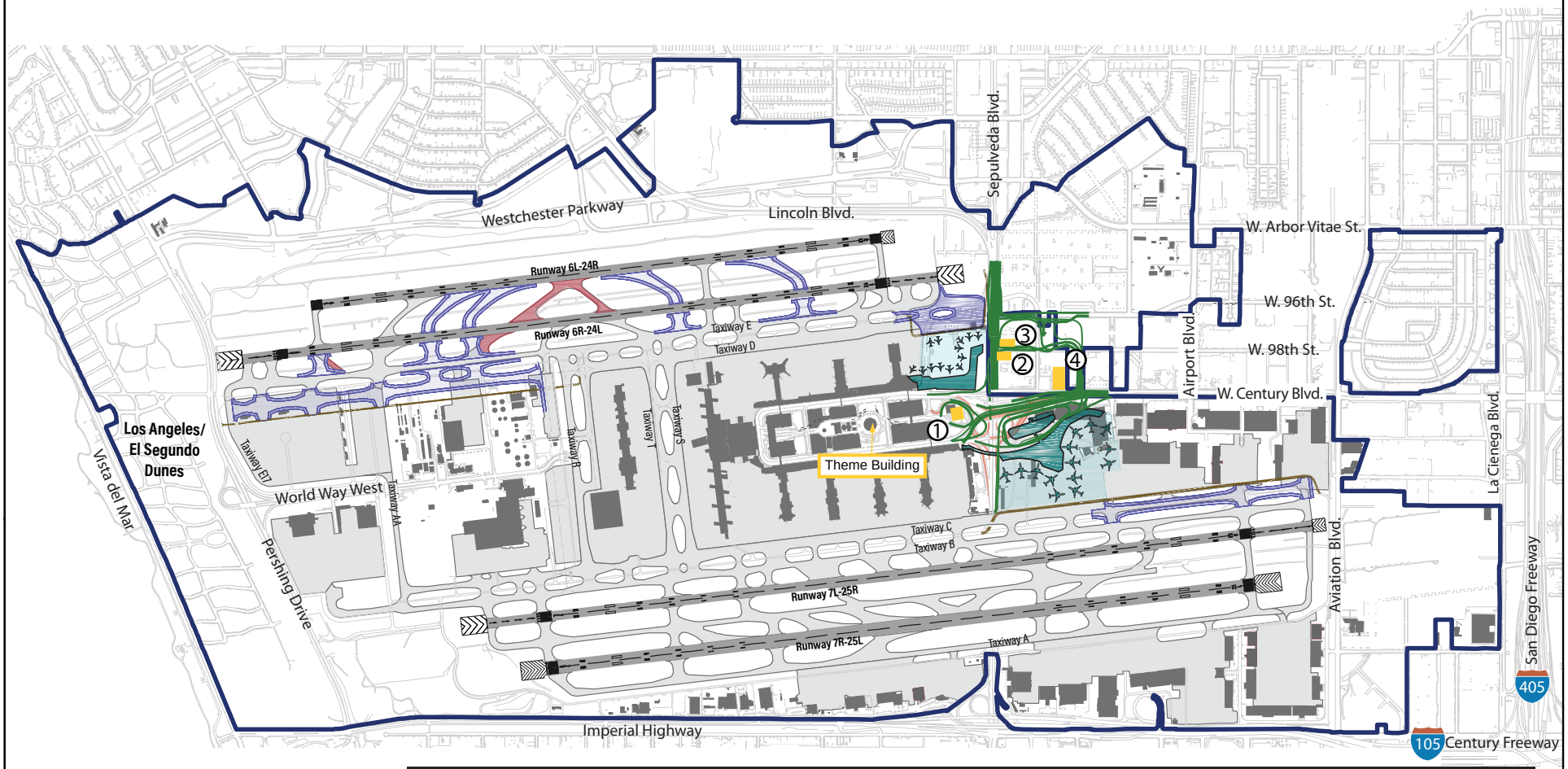
LAWA has identified 14 resources at LAX as individually eligible for designation as historic resources, including two resources already designated. Of these resources, LAWA has committed to the long-term preservation of seven resources. In addition to the historical resources identified in the LAX Preservation Plan, LAWA has identified other historical properties in close proximity to LAX in environmental documents prepared for previous projects. Of the on- and off-airport resources identified as individually eligible for designation as historic resources, four properties are located in proximity to Project components. The identified historical resources are as follows:

1. 1961 Airport Traffic Control Tower at the eastern end of the CTA
2. Union Savings and Loan Building at 9800 S. Sepulveda Boulevard
3. Former Aircraft School Building at 9700 S. Sepulveda Boulevard
4. McCulloch Building at 6151 W. Century Boulevard

Figure 4.2-1 depicts the locations of these identified historical resources. These historical resources are further discussed in Section 4.2.3.2.2.

Of the four resources located within the Project vicinity, only one, the 1961 Airport Traffic Control Tower, is located on LAX property and is subject to the provisions of the LAX Preservation Plan. The 1961 Airport Traffic Control Tower is one of the seven resources identified for preservation in the Plan.

[20] City of Los Angeles, Los Angeles World Airports, *Final Environmental Impact Report for Los Angeles International Airport (LAX) Landside Access Modernization Program*, (SCH 2015021014), Appendix J, LAX Preservation Plan, prepared by Historic Resources Group, September 2016. Available: https://www.lawa.org/en/lawa-our-lax/plan-and-ordinances.



Legend

- LAX Property Boundary
- Airfield Improvements
- Terminal and Related Improvements
- Taxiway to be Removed or Decommissioned
- Vehicle Service Road
- Roadway Improvements
- Roadway to be Demolished
- Eligible Historical Resource

Eligible Historic Resources

1. 1961 Airport Traffic Control Tower
2. Union Savings and Loan
   9800 S. Sepulveda Boulevard
3. Former Aircraft School Building
   9700 S. Sepulveda Boulevard
4. McCulloch Building
   6151 W. Century Boulevard

0 1,500 3,000 Feet

Scale

Source: Sources: Ricondo & Associates, Inc., April 2020 (basemap); Los Angeles World Airports, January 2020 (Airport Layout Plan); CDM Smith, April 2020 (airport property line and histroic resources)
Prepared by: CDM Smith, October 2020

LAX Airfield and Terminal Modernization Project	Eligible Historical Resources in the Vicinity of the Proposed Project	Figure 4.2-1

4.2.3.2 Environmental Setting

4.2.3.2.1 Historical Development of LAX

As outlined in the historic resources assessment (see **Appendix D**), prior to its development as an airport, the land currently occupied by LAX was part of Rancho Sausal Redondo, which had been granted to Antonio Ygnacio Avila by the Mexican government in 1837. By 1894, this property was known as the Bennett Rancho, and was used to grow crops. Pioneering aviators began using a portion of the Bennett Rancho as a landing strip during the 1920s and the City of Los Angeles leased 640 acres of the field for the Los Angeles Municipal Airport in August 1928. The airport constructed its first permanent building – Hangar One – in 1929 and development continued that year with the construction of administrative offices, a runway, and additional hangars. Airport facilities were located at the southeast corner of the current LAX property, with buildings clustered near the intersection of present-day Aviation Boulevard and Imperial Highway.

Plans for a new modern airport were derailed by World War II. Wartime production activity at the aircraft manufacturing plants on and around the airport intensified dramatically. In 1942, the federal government assumed control of the airport and the Army Air Corps stationed planes and men at the field. In 1944, the City proposed a master plan with two stages of development: an initial stage to immediately accommodate commercial operations, followed by a long-range expansion to the west. The initial stage, known as the "Intermediate Terminal Facility" opened on the north side of the airfield in 1946 and ultimately consisted of four passenger terminals, new administrative buildings, and hangars for individual airlines. Los Angeles Municipal Airport was officially re-named Los Angeles International Airport (LAX) on October 11, 1949.

In 1956, a new master plan for a "Jet Age" airport was developed. The innovative scheme incorporated a U-shaped access road flanked by six ticketing buildings that, in turn, were connected via subterranean passageways to remote satellite buildings containing the actual boarding gates. Passenger amenities were located in the individual satellites. The center of the "U" contained parking, an administrative building surmounted by a state-of-the-art airport traffic control tower (ATCT) at the extreme east end of the site, a Theme Building restaurant in the center of the site, and support facilities. Inspired by the aesthetics of the Jet Age, the Theme Building quickly became an internationally-recognized symbol and centerpiece of the new airport.

Continuing growth of both commercial and freight traffic at LAX has resulted in numerous improvements over the last few decades including a second deck of the U-shaped access road to separate arriving and departing passengers, expansion and remodeling of the existing terminal buildings, new parking structures, the Tom Bradley International Terminal (1984), and a new ATCT (1996). Currently, a new Midfield Satellite Concourse is under construction west of the Tom Bradley International Terminal. In addition, improvements within and east of the CTA are underway as part of the LAX Landside Access Modernization Program, including an elevated Automated People Mover system, a consolidated rental car facility, intermodal transportation facilities, and roadway improvements.

4.2.3.2.2 Eligible Historical Resources

Eligible historical resources located on the Project site are identified in **Table 4.2-1** and shown on Figure 4.2-1**.** As shown on the figure, there are no historical resources located within the Project site. However, four properties that have been identified as eligible for historic listing are in the near vicinity. These include the 1961 ATCT at the eastern end of the CTA; the former McCulloch Building (now H Hotel/Homewood Suites) at 6151 W. Century Boulevard; the former Union Savings and Loan Building at 9800 S. Sepulveda Boulevard; and the former Aircraft School Building at 9700 S.

Sepulveda Boulevard. Additional details associated with the four properties can be found in **Appendix D**. All are considered historical resources herein for the purposes of CEQA.

Table 4.2-1
Summary of Historical Resources

Map #	Property[1]	Address	Date	National Register	California Register	Los Angeles Historic-Cultural Monument
1	1961 Airport Traffic Control Tower	1 World Way	1961	Ineligible	Ineligible	Eligible
2	Union Savings and Loan Building	9800 S. Sepulveda Boulevard	1964	Ineligible	Eligible	Eligible
3	Former Aircraft School Building	9700 S. Sepulveda Boulevard	1941-1945	Eligible	Eligible	Eligible
4	McCulloch Building	6151 W. Century Boulevard	1963	Ineligible[2]	Eligible	Eligible

Source: **Appendix D** of this EIR.

Notes:

1 The 1961 Airport Traffic Control Tower is owned by LAWA. All the other properties listed are privately owned.

2 During the environmental review of the LAX Landside Access Modernization Program, FAA determined that the McCulloch Building was ineligible for the National Register. SHPO did not formally concur with this determination. Rather, because the LAX Landside Access Modernization Program would not affect the property, SHPO and FAA agreed to consider it as eligible for purposes of that project.

1961 Airport Traffic Control Tower

The 1961 Administration Building (currently known as the Clifton A. Moore Administration Building) and ATCT form the eastern terminus of the central axis of the CTA. It sits on an ovular island ringed by access roads. The building is Mid-century Modern in style and is of steel frame and reinforced concrete construction. It is composed of two main parts: an office building forming a low base, and the actual control tower that rises above. Due to extensive alteration of the two-story Administration portion and alterations to the Tower portion, the building does not retain sufficient integrity to be eligible for listing in the National Register. Given the overall alteration of its architectural design, the building is also not eligible for listing in the California Register. However, the Tower appears eligible for local listing as a City of Los Angeles Historic-Cultural Monument and is treated herein as a historical resource for the purposes of CEQA.

Union Savings and Loan Building

An eight-story office building is located at 9800 S. Sepulveda Boulevard on the southeast corner of Sepulveda Boulevard and W. 98th Street. The building was originally constructed for Union Savings and Loan in 1964. This mid-rise commercial office building was identified as eligible for the California Register and for local listing as a City of Los Angeles Historic-Cultural Monument in 2012. It was not found eligible for listing in the National Register. The property is treated herein as a historical resource for the purposes of CEQA.

Former Aircraft School Building

The property at 9700 S. Sepulveda Boulevard was originally developed by the Los Angeles City High School District in 1941 for use as a National Defense Training School. Beginning in 1945, the property was referred to as the Los Angeles City Aircraft School with the Los Angeles City School District as its owner. The property is currently owned by the West Los Angeles College (a community college within the Los Angeles Community College District). The primary structure on the site, hereafter referred to as the former Aircraft

School Building, is used by the college for storage of movie set props and instruction to support its Film/Television Production Crafts program. One course per quarter is held at the facility. The remainder of the property is currently used for commercial parking.

Evidence suggests that the property has a long historic association with training in the aircraft trades in service of the explosive post-World War II growth of the aerospace industry in Southern California. Constructed for civil defense training just eight months prior to the Japanese attack of Pearl Harbor, the property continued to be used for training in the aircraft trades following World War II. As such, it appears the property is eligible for the National Register, California Register, and as a City of Los Angeles Historic-Cultural Monument as a rare intact example of an aircraft training facility from the 1940s and one of the oldest remaining buildings associated with aviation located in the vicinity of the airport.

Only the rectangular bow-truss building appears to have retained sufficient integrity to convey the historic significance of the property. Because it appears eligible for the National Register, California Register, and for local listing as a City of Los Angeles Historic-Cultural Monument, 9700 S. Sepulveda Boulevard is treated herein as a historical resource for the purposes of CEQA.

McCulloch Building

The subject property, referred to as the McCulloch Building, is located at 6151 W. Century Boulevard on the north side of W. Century Boulevard between Vicksburg Avenue and Avion Drive. The 12-story office building was constructed in 1963 as part of "International Airport Center," a large commercial development along the north side of W. Century Boulevard. In 2013, SurveyLA identified the building as eligible for listing in the National Register, the California Register, and as a City of Los Angeles Historic-Cultural Monument.

6151 W. Century Boulevard was converted from office space to hotel use in 2017. In 2017, after this conversion and after CEQA review of the LAX Landside Access Modernization Program, the FAA, as part of their oversight of environmental review of the LAX Landside Access Modernization Program under NEPA and Section 106 of the NHPA, determined that 6151 W. Century Boulevard was not eligible for the National Register because the integrity of the building was diminished went it was converted.[21] As part of the NEPA process, the State Historic Preservation Officer (SHPO) requested additional information to concur or disagree with FAA's determination of eligibility. Because the LAX Landside Access Modernization Program would not affect the property, SHPO considered the property as eligible for purposes of that undertaking. The FAA does not evaluate properties relative to the California Register or for the City of Los Angeles Historic-Cultural Monument designation.

As noted above, the building was converted to hotel use in 2017. The hotel conversion included some alteration of the façades. Following this conversion, the building's eligibility has not been reevaluated. For purposes of this document, it is assumed that the conversion did not alter the previous eligibility findings. Therefore, because the building was previously found eligible for the California Register and for local listing as a City of Los Angeles Historic-Cultural Monument, it is considered a historical resource herein for the purposes of CEQA.

[21] U.S. Department of Transportation, Federal Aviation Administration, *Los Angeles International Airport Landside Access Modernization Program Final Environmental Assessment,* Appendix H.2 - SHPO Coordination Letters, December 2017. Available: https://www.lawa.org/connectinglax/automated-people-mover/documents.

4.2.4 Thresholds of Significance

A significant impact on historical resources would occur if the proposed Project would:

Threshold 4.2-1 Cause a substantial adverse change in the significance of a historical resource pursuant to State CEQA Guidelines Section 15064.5.

This threshold is from Appendix G of the State CEQA Guidelines. In accordance with Section 15064.5(b)(1) of the State CEQA Guidelines, a "[s]ubstantial adverse change means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired." Further, the Guidelines provide that the significance of an historical resource is considered to be materially impaired when a project demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for inclusion in, the National Register, California Register, and/or local register.

4.2.5 Project Impacts

4.2.5.1 Impact 4.2-1

Summary Conclusion for Impact 4.2-1: Implementation of the proposed Project would not cause a substantial adverse change in the significance of a historical resource pursuant to State CEQA Guidelines Section 15064.5. This would be a *less than significant impact* for construction and operations.

4.2.5.1.1 Impacts to Individual Historical Resources

1961 ATCT

As discussed in Section 4.2.3.2.2, the 1961 ATCT has been substantially altered but is still recognizable as a control tower and retains sufficient integrity to be eligible for local listing as a City of Los Angeles Historic-Cultural Monument. Although the majority of the terminal area and landside improvements of the proposed Project would be located at a substantial distance from the 1961 ATCT (over 200 feet to Concourse 0 and over 750 feet to the Terminal 9 parking garage and the westernmost edge of Terminal 9), the roadways that currently encircle the 1961 Administration Building, the closest of which is located approximately 130 feet from the ATCT, would be modified and nearby roadways would be demolished. None of the Project-related improvements would require demolition or alteration of the 1961 ATCT. The 1961 ATCT would remain in its original location at the eastern entry to the CTA and retain its historic axial relationship with the Theme Building. The Tower would remain substantially taller than Concourse 0, Terminal 9, the additional APM station adjoining Terminal 9, and the grade-separated ramps and roadways associated with the proposed landside improvements.

Because the proposed Project would introduce a new concourse, terminal, APM station, and new roadway improvements in the near vicinity of the 1961 ATCT, its immediate surroundings would be altered. However, the immediate surroundings of the 1961 ATCT have undergone numerous major and minor alterations since both the initial completion of the CTA in 1962 and its transformation since 1981. Moreover, the larger setting is not critical to understanding the historic significance of the 1961 ATCT because its immediate surroundings have been substantially altered since its original construction and the alteration and new construction associated with the proposed Project would not be substantially different from previous changes and alterations. For these reasons, all of the relevant aspects of integrity would be unaffected by the proposed Project, so that the historic integrity of the 1961 ATCT would be retained. While the proposed Project would alter the larger surroundings of the 1961 ATCT, this alteration would not materially impair the building such that it can no longer convey its historic significance.

Because the proposed Project would not result in physical alteration of the structure and materials of the 1961 ATCT, it would remain eligible for listing as a City of Los Angeles Historic-Cultural Monument. The remaining physical materials and form of the 1961 ATCT would remain intact, and the building would continue to convey its historic significance. Therefore, the proposed Project would not result in significant impacts to the 1961 ATCT.

Union Savings and Loan Building

As discussed in Section 4.2.3.2.2, the former Union Savings and Loan Building at 9800 S. Sepulveda Boulevard is eligible for listing in the California Register and as a City of Los Angeles Historic-Cultural Monument. Elements of the proposed Project in closest proximity to the Union Savings and Loan Building are largely confined to the proposed terminal area and landside elements, including the following:

- Concourse 0, which would be located directly west of the Union Savings and Loan Building across Sepulveda Boulevard, replacing a surface parking lot
- New elevated roadways north of the Union Savings and Loan Building on the northern side of 98th Street and on the western side of Sepulveda Boulevard across the street from the building

Although the majority of the terminal area and landside improvements of the proposed Project would be located at a distance from the Union Savings and Loan Building (over 200 feet to Concourse 0 and over 1,000 feet to the Terminal 9 parking garage), a new elevated roadway would be located approximately 75 feet north of the building. None of the proposed improvements, including the new elevated roadway, would require demolition or alteration of the Union Savings and Loan Building. The Union Savings and Loan Building would retain all of its character-defining features.

Elevated roadways associated with the proposed landside improvements would partially obscure views of the north and west façades. At eight stories, however, the Union Savings and Loan Building would be over three times the height of the elevated roadways and all of its public-facing façades would remain discernible despite partial blocking of views from the west and north. After construction of the elevated roadways, the Union Savings and Loan Building would remain intact and continue to convey its historic significance. Construction of the elevated roadways would not result in a significant impact to the Union Savings and Loan Building.

Because the proposed Project would introduce a new concourse and elevated roadway improvements in the near vicinity of the Union Savings and Loan Building, its immediate surroundings would be altered. However, the immediate surroundings of the Union Savings and Loan Building have undergone numerous alterations since its original construction as new buildings were constructed and surrounding existing buildings were demolished to make way for surface parking lots. Moreover, the larger setting is not critical to understanding the historic significance of the Union Savings and Loan Building because its immediate surroundings have been substantially altered since its original construction and the alteration and new construction associated with the proposed Project would not be substantially different from previous changes and alterations. For these reasons, all of the relevant aspects of integrity would be unaffected by the proposed Project, so that the historic integrity of the Union Savings and Loan Building would be retained. While the proposed Project would alter the larger surroundings of the Union Savings and Loan Building, this alteration would not materially impair the building such that it can no longer convey its historic significance.

Because the proposed Project would not result in physical alteration of the structure and materials of the Union Savings and Loan Building, it would remain eligible for listing in the California Register and as a City of Los Angeles Historic-Cultural Monument. The character-defining features and form of the Union Savings and Loan Building would remain intact, and the building would continue to convey its historic

significance. Therefore, the proposed Project would not result in significant impacts to the Union Savings and Loan Building.

Former Aircraft School Building

As discussed in Section 4.2.3.2.2, the former Aircraft School Building at 9700 S. Sepulveda Boulevard is eligible for listing in the National Register, California Register, and as a City of Los Angeles Historic-Cultural Monument. Elements of the proposed Project in closest proximity to the former Aircraft School Building are confined to the proposed terminal area and landside elements including the following:

- Concourse 0, which would be located west of the former Aircraft School Building across Sepulveda Boulevard, replacing a surface parking lot
- New elevated roadways on the north side of 98th Street providing access from Sepulveda Boulevard into the CTA

Although the majority of the terminal area and landside improvements of the proposed Project would be located at a distance from the former Aircraft School Building (with the closest, Concourse 0, approximately 380 feet away), elevated roadways would be located approximately 45 feet west and approximately 65 feet south of the building. None of the proposed improvements, including the new elevated roadways, would require demolition or alteration of the former Aircraft School Building. The former Aircraft School Building would retain all of its character-defining features.

Elevated roadways associated with the proposed landside improvements would obscure views of the south façade. Views from the west would remain. After construction of the elevated roadways, the former Aircraft School Building would remain intact in its current location and would continue to reflect its historic significance.

Because the proposed Project would introduce a new concourse and elevated roadway improvements in the near vicinity of the former Aircraft School Building, its immediate surroundings would be altered. However, the immediate surroundings of the former Aircraft School Building have undergone numerous alterations since its original construction as new buildings were constructed and surrounding buildings were demolished to make way for surface parking lots. Moreover, the larger setting is not critical to understanding the historic significance of the former Aircraft School Building because its immediate surroundings have been substantially altered since its original construction and the alteration and new construction associated with the proposed Project would not be substantially different from previous changes and alterations. For these reasons, all of the relevant aspects of integrity would be unaffected by the proposed Project, so that the historic integrity of the former Aircraft School Building would be retained. While the proposed Project would alter the larger surroundings of the former Aircraft School Building, this alteration would not materially impair the building such that it can no longer convey its historic significance.

Because the proposed Project would not result in physical alteration of the structure and materials of the former Aircraft School Building, it would remain eligible for listing in the National Register, California Register, and as a City of Los Angeles Historic-Cultural Monument. The character-defining features and form of the former Aircraft School Building would remain intact, and the building would continue to convey its historic significance. Therefore, the proposed Project would not result in significant impacts to the former Aircraft School Building.

McCulloch Building

As discussed in Section 4.2.3.2.2, the former McCulloch Building at 6151 W. Century Boulevard is eligible for listing in the California Register and as a City of Los Angeles Historic-Cultural Monument. (In recent years the McCulloch Building has been altered through renovations associated with its conversion to the H Hotel/Homewood Suites. The building's eligibility was not reevaluated following its

conversion to a hotel use in 2017. This analysis assumes that the McCulloch Building still retains its historical significance.) Elements of the proposed Project in closest proximity to the McCulloch Building are confined to the proposed terminal area and landside elements including the following:

- Terminal 9, which would be located southeast of the Sepulveda Boulevard/Century Boulevard intersection
- Access improvements in conjunction with the construction of Terminal 9, including an added station on the previously-approved APM line, and improvements to nearby roadways
- New elevated roadways to the east of the McCulloch Building along the future "A" Street

Although the majority of the terminal area and landside improvements of the proposed Project would be located at a distance from the McCulloch Building (approximately 375 feet to the Terminal 9 parking garage and approximately 475 feet to Terminal 9), a new elevated roadway would be located approximately 55 feet south and 100 feet east of the building. None of the proposed improvements, including the new elevated roadway, would require demolition or alteration of the McCulloch Building. The McCulloch Building would retain all of its character-defining features.

Elevated roadways associated with the proposed Project would be adjacent to the McCulloch building to the south and east, partially obscuring views of the south and east façades. At 12 stories, however, the McCulloch Building would be over twice the height of the elevated roadways and all of its public-facing façades would remain discernible despite partial blocking of views by the elevated roadways. After construction of the elevated roads, the McCulloch Building would remain intact and continue to convey its historic significance. Construction of the elevated roadways would not result in a significant impact to the McCulloch Building.

Because the proposed Project would introduce a new terminal and elevated roadway improvements in the near vicinity of the McCulloch Building, its immediate surroundings would be altered. However, the immediate surroundings of the McCulloch Building have undergone numerous alterations since its original construction as new buildings were constructed. Moreover, the larger setting is not critical to understanding the historic significance of the McCulloch Building because its immediate surroundings have been substantially altered since its original construction. For these reasons, all of the relevant aspects of integrity would be unaffected by the proposed Project, so that the historic integrity of the McCulloch Building would be retained. While the proposed Project would alter the larger surroundings of the McCulloch Building, this alteration would not materially impair the building such that it can no longer convey its historic significance.

Because the proposed Project would not result in physical alteration of the structure and materials of the McCulloch Building, it would remain eligible for listing in the California Register and as a City of Los Angeles Historic-Cultural Monument. The character-defining features and form of the McCulloch Building would remain intact, and the building would continue to convey its historic significance. Therefore, the proposed Project would not result in significant impacts to the McCulloch Building.

4.2.5.1.2 Summary of Impacts

Based on the above, impacts on historical resources from construction and operation of the proposed Project would be ***less than significant***.

4.2.5.1.3 Mitigation Measures

Because the proposed Project would result in a ***less than significant impact*** to historical resources located in the near vicinity of the Project, no mitigation is required for construction or operations.

4.2.5.1.4 Significance of Impact After Mitigation

As indicated above, no mitigation is required to address historical resources. The proposed Project would result in a ***less than significant impact*** for construction and operations.

4.2.6 Cumulative Impacts

The geographic scope of cumulative impacts related to cultural resources consists of the Project improvement sites, inclusive of the construction staging areas, and parcels in close proximity to the Project improvement sites. As discussed above, there are four historical resources located within the near vicinity of the proposed Project. Implementation of the proposed Project would not have any significant impacts on these historical resources. Therefore, the proposed Project would not contribute to cumulative impacts to historical resources.

4.2.7 Summary of Impact Determinations

Table 4.2-2 summarizes the impact determinations of the proposed Project related to cultural resources (historical resources), as described above in Sections 4.2.5 and 4.2.6. Impact determinations are based on the significance criteria presented in Section 4.2.4, and the information and data sources cited throughout Section 4.2.

Table 4.2-2
Summary of Impacts and Mitigation Measures Associated with the Proposed Project Related to Cultural Resources (Historical Resources)

Environmental Impacts	Impact Determination	Mitigation Measures	Level of Significance After Mitigation
Impact 4.2-1: Implementation of the proposed Project would not cause a substantial adverse change in the significance of a historical resource pursuant to State CEQA Guidelines Section 15064.5. This would be a ***less than significant impact*** for construction and operations.	Construction: Less than Significant Operations: Less than Significant	No mitigation is required	Construction: Less than Significant Operations: Less than Significant

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4.3 Energy

4.3.1 Introduction

This section evaluates the potential energy impacts of the proposed Project and identifies plans, programs and policies that would preclude the wasteful, inefficient, and unnecessary consumption of energy.[1] Energy is a measure of power; the proposed Project would have the potential to result in impacts as a result of changes to electricity consumption, natural gas consumption, and transportation-related fuel consumption. Air pollutant and greenhouse gas (GHG) emissions associated with energy consumption are evaluated in Section 4.1.1, *Air Quality,* and Section 4.4, *Greenhouse Gas Emissions*, respectively.

4.3.2 Methodology

The analysis evaluates whether the proposed Project would result in wasteful, inefficient, or unnecessary consumption of energy resources during Project construction or operation, and whether the proposed Project would conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

Short-term energy demand would result from construction of the proposed Project, including energy demand from worker, vendor, and haul vehicle trips, as well as construction equipment usage. Long-term energy consumption would occur at Concourse 0, Terminal 9, and the Terminal 9 parking facility,[2] and from aircraft operations and passenger-related trips during Project operations. The methodologies used to evaluate energy consumption are discussed below.

4.3.2.1 Electricity/Natural Gas

The proposed Project would result in increases in electricity and natural gas consumption, primarily from operating Concourse 0 and Terminal 9. New electricity-consuming activities would include terminal and concourse lighting, air circulation and cooling, dining facilities and passenger amenities, and use of power and pre-conditioned air by aircraft at gates. Electricity would also be consumed to support a fractional increase in the delivery, treatment, and distribution of water and wastewater used and generated by the new facilities, respectively. New natural gas-consuming activities would include terminal and concourse heating, and dining facilities and passenger amenities.

As identified in Chapter 2, *Description of the Proposed Project,* implementation of the proposed Project would require the removal and/or relocation of a number of uses in order to accommodate the proposed improvements. In some cases, this would entail the demolition of existing uses that currently consume electricity and/or natural gas. This analysis does not account for the reduction in electricity and natural gas associated with the removal of these uses. Therefore, the calculations of Project-related electricity and natural consumption are conservative (i.e., overstate total Project-related consumption).

The California Emissions Model (CalEEMod) is a statewide land use criteria air pollutant and GHG emissions model[3] that can be used to analyze future energy use using generic demand factors. Generic demand factors from CalEEMod are based on use classifications; however, the model does not have use classifications specific to airport facilities or terminals. LAX-specific demand factors are more precise than using generic demand factors and they enable a realistic estimate of anticipated electricity and natural gas consumption based on existing terminal and building operations at LAX. As such, LAX-specific demand

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1 Public Resources Code, Section 21100(b)(3); California Code of Regulations, Title 14, Section 15126.4(a)(1)(C); California Natural Resources Agency, *California State CEQA Guidelines,* Appendices F & G, 2020.

2 Energy consumption associated with the Terminal 9 Automated People Mover (APM) station, which would only be a boarding/deboarding platform, would be negligible.

3 California Air Pollution Control Officers Association, *California Emissions Estimator Model, Version 2016.3.2*. Available: http://www.caleemod.com/.

factors were used to estimate energy demand associated with Concourse 0 and Terminal 9. However, as described further below, CalEEMod was used to estimate energy demand associated with the Terminal 9 parking facility.

Building energy demand (including that for airport terminals) is closely correlated with total building area; the electricity and natural gas demand for Concourse 0 and Terminal 9 was estimated by applying LAX-specific generation/demand factors for the new square footage to be constructed. LAWA tracks and analyzes electricity and natural gas consumption data for internal operational purposes and for accreditation under the voluntary Airport Carbon Accreditation (ACA) program managed by the Airports Council International-Europe.[4] Consumption data are collected by a network of meters and submeters throughout the airport. The LAX-specific demand factors for electricity and natural gas consumption used in this analysis were developed based on three years of historic data (2016, 2017, and 2018) for the Tom Bradley International Terminal. The data for the Tom Bradley International Terminal were used because this building was recently renovated and the building's energy consumption profile is representative of the planned facilities under the proposed Project. Historic data for Terminal 2, Terminal 6, Terminal 7, and Terminal 8 were also available and were used to validate the data for the Tom Bradley International Terminal. This robust data set enabled calculation of LAX-specific demand factors based on verified consumption rates and facility square footages.

LAWA does not separately track consumption data for parking facilities; therefore, this analysis used a generic demand factor from CalEEMod to analyze potential energy use from the proposed parking facility at Terminal 9. The representative demand factor from the CalEEMod User's Guide Appendix D Default Data Tables that was used in the analysis was the demand factor for an enclosed parking structure with elevator.[5]

Electricity demand associated with water consumption and wastewater generation was calculated by using energy intensity factors from CalEEMod.[6]

The total projected increase in electricity and natural gas consumption was evaluated against the anticipated capacity of the service providers based on the existing and planned capacities of each utility, as identified by utility providers, to determine consistency with utility providers' supply planning. The projected increase in electricity and natural gas consumption was also evaluated in the context of existing and planned regulations, policies, and programs addressing energy conservation, as well as features of the proposed Project that would serve to reduce energy consumption, to determine if the Project would result in wasteful, inefficient, or unnecessary consumption of energy resources, or would conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

4.3.2.2 Mobile Source and Transportation-Related Fuels

The analysis evaluates the potential changes in mobile source and transportation-related fuel consumption that would result from the proposed Project.

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4 Los Angeles World Airports, *LAX and Van Nuys Airports Receive International Certification for Greenhouse Gas Reductions*, September 2019. Available: https://www.lawa.org/en/news-releases/2019/news-release-106.

5 California Air Pollution Control Officers Association, *California Emissions Estimator Model, Appendix D Default Data Tables,* prepared by BREEZE Software in collaboration with the South Coast Air Quality Management District and the California Air Districts, October 2017. Available: http://www.caleemod.com/.http://www.aqmd.gov/docs/default-source/caleemod/05_appendix-d2016-3-2.pdf?sfvrsn=4. The Terminal 9 parking facility would be either a surface parking lot or a parking structure. In order to provide a conservative analysis with respect to energy consumption, a parking structure was assumed.

6 California Air Pollution Control Officers Association, *California Emissions Estimator Model, Appendix D Default Data Tables,* prepared by BREEZE Software in collaboration with the South Coast Air Quality Management District and the California Air Districts, October 2017. Available: http://www.caleemod.com/.http://www.aqmd.gov/docs/default-source/caleemod/05_appendix-d2016-3-2.pdf?sfvrsn=4.

4.3.2.2.1 Construction

Fuel consumption associated with construction activities would result from the construction worker, vendor, and haul trips; and use of heavy equipment, water trucks, and other on-site vehicles.

The methodology for estimating construction equipment usage and worker, vendor, and haul trips is provided in Section 4.1.1, *Air Quality.* Fuel usage was derived from the estimated construction GHG emissions discussed and analyzed in Section 4.4, *Greenhouse Gas Emissions*. Specifically, consistent with Intergovernmental Panel on Climate Change (IPCC) guidelines used by the California Air Resources Board (CARB) for its own GHG and fuel inventories, fuel consumption was estimated by converting the carbon dioxide (CO_2) emissions from gasoline and diesel fuel consumption during each phase of construction to gallons using established conversion factors for CO_2 to gallons of gasoline or diesel.[7] The conversion factor for gasoline is 8.89 kilograms (kg) CO_2 per gallon (kg CO_2/gal) and the conversion factor for diesel is 10.16 kg CO_2/gal.[8]

4.3.2.2.2 Operations

The proposed Project would also result in changes to mobile source and transportation-related fuel consumption during operations resulting from increases in annual passengers and aircraft operations, as well as changes to the roadway system. Gasoline and diesel would be consumed by privately-owned vehicles; government-owned vehicles; commercially-owned/operated ground transportation vehicles, such as rental cars, shuttles, buses, taxicabs, transportation network companies (TNCs) like Uber and Lyft, and trucks; auxiliary power units (APUs); and ground support equipment (GSE). As with construction-related fuel use, operational fuel use was determined by applying U.S. Environmental Protection Agency (USEPA) carbon content factors to the estimated GHG emissions for the corresponding fuel type.[9]

Aviation fuel (i.e., Jet A) would be consumed by aircraft engines and APUs. Jet fuel consumption was derived from FAA's Aviation Environmental Design Tool Version 3b (AEDT 3b).[10,11]

Using the methodologies outlined above, total operational fuel consumption with implementation of the proposed Project in 2028 was determined. The results were compared to fuel consumption under baseline (2018) conditions in order to determine incremental impacts associated with the proposed Project. As further discussed under the heading "Analytical Framework" at the beginning of this chapter (Environmental Impact Analysis), for purposes of this analysis, baseline conditions are from calendar year 2018, which provides a full years' worth of aircraft-related activity data prior to the publication of the Notice of Preparation (NOP) in April 2019.

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7 Intergovernmental Panel on Climate Change, *2006 IPCC Guidelines for National Greenhouse Gas Inventories,* Volume 2 – Energy, Chapter 3 – Mobile Combustion, 2006. Available: https://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/2_Volume2/V2_3_Ch3_Mobile_Combustion.pdf.

8 U.S. Energy Information Administration, *Carbon Dioxide Emissions Coefficients,* release date February 2, 2016. Available: https://www.eia.gov/environment/emissions/co2_vol_mass.php.

9 U.S. Environmental Protection Agency, *Emission Factors for Greenhouse Gas Inventories*, March 9, 2018. Available: https://www.epa.gov/sites/production/files/2018-03/documents/emission-factors_mar_2018_0.pdf.

10 Federal Aviation Administration, *Aviation Environmental Design Tool (AEDT) Version 3b*, September 2019. Available: https://aedt.faa.gov/3b_information.aspx, accessed March 26, 2020. As noted in Section 4.1.1, *Air Quality*, an updated version of AEDT, specifically AEDT 3c, was released by the FAA on March 6, 2020; however, the environmental analysis process for this Project, including modeling with AEDT 3b, was already well underway at that time. Paragraph 4-2.b. of FAA Order 1050.1F states: "*In the event a model is updated or replaced after the environmental analysis process is underway, the updated or replacement model may be used to provide additional disclosure concerning noise or air quality impacts, but use of the updated or replacement model is not required*." As such, the aircraft noise modeling and aircraft air quality modeling for the Project were completed using AEDT 3b.

11 It should be noted that, unlike cars, where changes in emissions are recognized in the fuel economy standards applied to future vehicle trips, AEDT does not assume any future emissions reductions due to increased fuel economy, aircraft design improvements, or federal rules pertaining to aircraft engines. Therefore, future aircraft-related GHG emissions may be overstated.

4.3.3 Existing Conditions

This section presents a summary of energy providers and facilities at the Project site and surrounding area, as well as conservation programs and policies currently being implemented.

4.3.3.1 Regulatory Setting

4.3.3.1.1 Federal

Federal Energy Laws

The Federal Energy Policy and Conservation Act of 1975, the Energy Policy Act of 1992, the Federal Energy Policy Act of 2005, and the Energy Independence and Security Act of 2007 require the U.S. Department of Energy (DOE) to establish and periodically update mandatory federal energy-efficiency requirements. DOE's Building Technologies Office establishes and updates notices and rules related to commercial and residential buildings.

Federal Fuel Efficiency Standards

Federal Corporate Average Fuel Economy (CAFE) standards were adopted in 2010 for passenger cars, light-duty trucks, and medium-duty passenger vehicles for model years 2012 through 2016. The standards surpassed the prior CAFE standards and required an average fuel economy standard of 35.5 miles per gallon (mpg) and 250 grams of CO_2 per mile by model year 2016, based on USEPA calculation methods. In August 2012, standards were adopted for model year 2017 through 2025, which required vehicles to achieve 54.5 mpg and 163 grams of CO_2 per mile by 2025.[12]

In August 2018, USEPA and the National Highway Traffic Safety Administration (NHTSA) proposed amendments to state waivers granted under the Clean Air Act and the CAFE standards. These amendments were termed the ''Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021–2026 Passenger Cars and Light Trucks'' (SAFE Vehicles Rule).[13] In September 2019, USEPA and NHTSA published a final rule, the "SAFE Vehicles Rule Part One: One National Program" (84 Fed. Reg. 51,310; effective November 26, 2019), which revoked California's waiver to set vehicle emissions and fuel economy standards more stringent than national standards under Section 209 of the Clean Air Act.[14] The final rule takes the position that those state programs were preempted under NHTSA's nationally applicable fuel economy standards. California and a coalition of other states have sued both the USEPA and the NHTSA, challenging the final rule, which blocks states from setting automobile emissions standards more stringent than national standards.[15,16]

In April 2020, a related final rule, called the SAFE Vehicles Rule, was published (84 Fed. Reg. 24,174; effective June 29, 2020).[17] The final rule amends the CO_2 emissions standards and CAFE standards for model year 2021-2026 passenger cars and light trucks. Under the final rule, the CAFE and CO_2 emissions

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12 U.S. Environmental Protection Agency, *Regulatory Announcement: EPA and NHTSA Set Standards to Reduce Greenhouse Gases and Improve Fuel Economy for Model Years 2017-2025 Cars and Light Trucks*, August 2012. Available: https://nepis.epa.gov/Exe/ZyPDF.cgi/P100EZ7C.PDF?Dockey=P100EZ7C.PDF.

13 U.S. Environmental Protection Agency and National Highway Traffic Safety Administration, *The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021–2026 Passenger Cars and Light Trucks*, 83 FR 42,986, August 24, 2018.

14 U.S. Environmental Protection Agency and National Highway Traffic Safety Administration, *Withdrawal of Waiver, Final Rule - The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule Part One: One National Program*, 84 FR 51,310, September 27, 2019.

15 *California v. Wheeler*, No. 19-1239 (D.C. Cir. Pet'n filed Nov. 15, 2019).

16 State of California, Department of Justice*, Press Release: Attorney General Becerra Files Lawsuit Challenging Trump Administration's Attempt to Trample California's Authority to Maintain Longstanding Clean Car Standards*, September 20, 2019. Available: https://oag.ca.gov/news/press-releases/attorney-general-becerra-files-lawsuit-challenging-trump-administration%E2%80%99s, accessed December 9, 2019.

17 U.S. Environmental Protection Agency and National Highway Traffic Safety Administration, *Final Rule, The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks*, 85 FR 24,174, April 30, 2020. Available: https://www.govinfo.gov/content/pkg/FR-2020-04-30/pdf/2020-06967.pdf.

standards increase in stringency by only 1.5 percent per year for each model year over model year 2020 levels.[18] These standards are less stringent than the previous standards, which would have increased fuel efficiency standards by 4 percent per year. On May 27, 2020, a multistate coalition lead by California filed a lawsuit against the USEPA and the NHTSA challenging this ruling.[19] In its lawsuit, the coalition argues that the rollback of the nation's emissions standards is unlawful as the rollbacks "violate the statutory text and congressional mandates they are bound by" and relied on erroneous analysis and unfounded assumptions, among other things.[20] CARB has developed model adjustment factors that account for the SAFE Vehicles Rule.[21,22] The adjustment factors were applied to the estimates of passenger car and light truck emissions used in this analysis which, in turn, were used to estimate fuel consumption.

USEPA and NHTSA established Heavy-Duty National Program fuel efficiency standards for medium- and heavy-duty trucks in 2011. The Phase 1 heavy-duty truck standards apply to combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles for model years 2014 through 2018 and result in a reduction in fuel consumption from 6 to 23 percent over a 2010 baseline, depending on the vehicle type.[23] The Phase 2 heavy-duty truck standards adopted in 2016 cover model years 2021 through 2027 and require the phase-in of a 5 to 25 percent reduction in fuel consumption over a 2017 baseline, depending on the compliance year and vehicle type.[24]

4.3.3.1.2 State

Title 24 Energy Standards

The California Building Standards Code (California Code of Regulations [CCR], Title 24) contains the implementing regulations for building standards in California. CCR Title 24 Part 1 Chapter 10 and CCR Title 24 Part 6 are known collectively as the California Energy Code. The California Energy Code contains energy efficiency standards for residential and non-residential buildings, which are known as the Building Energy Efficiency Standards.[25] The efficiency standards apply to new construction of residential and non-residential buildings, and regulate energy consumed for heating, cooling, ventilation, water heating, and lighting. The building efficiency standards are enforced through the local building permit process. Local government agencies may adopt and enforce energy standards for new buildings provided these standards meet or exceed those provided in Title 24 guidelines.

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18 National Highway Traffic Safety Administration, *NHTSA and EPA finalize CAFE and carbon dioxide emissions standards for model years 2021-2026*, March 31, 2020. Available: https://www.nhtsa.gov/corporate-average-fuel-economy/safe, accessed June 4, 2020.

19 *California v. Wheeler*, No. 20-1167 (D.C. Cir. Pet'n filed May 27, 2020).

20 State of California, Department of Justice, Press Release: *Attorney General Becerra Files Lawsuit Challenging Trump Administration's Reckless Rollback of America's Clean Car Standards*, May 27, 2020. Available: https://oag.ca.gov/news/press-releases/attorney-general-becerra-files-lawsuit-challenging-trump-administration%E2%80%99s-2.

21 California Air Resources Board, *EMFAC Off-Model Adjustment Factors to Account for the SAFE Vehicle Rule Part One*, November 20, 2019. Available: https://ww3.arb.ca.gov/msei/emfac_off_model_adjustment_factors_final_draft.pdf.

22 California Air Resources Board, *EMFAC Off-Model Adjustment Factors for Carbon Dioxide (CO_2) Emissions to Account for the SAFE Vehicles Rule Part One and the Final SAFE Rule*, June 26, 2020. Available: https://ww3.arb.ca.gov/msei/emfac_off_model_co2_adjustment_factors_06262020-final.pdf.

23 U.S. Environmental Protection Agency, *Regulatory Announcement: EPA and NHTSA Adopt First-Ever Program to Reduce Greenhouse Gas Emissions and Improve Fuel Efficiency of Medium- and Heavy-Duty Vehicles*, August 2011. Available: https://nepis.epa.gov/Exe/ZyPDF.cgi/P100BOT1.PDF?Dockey=P100BOT1.PDF.

24 U.S. Environmental Protection Agency, Federal Register, Vol. 81, No. 206, *Greenhouse Gas Emissions and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles - Phase 2*, October 25, 2016. Available: https://www.govinfo.gov/content/pkg/FR-2016-10-25/pdf/2016-21203.pdf.

25 California Energy Commission, *2019 Building Energy Efficiency Standards for Residential and Nonresidential Buildings*, December 2018. Available: https://ww2.energy.ca.gov/2018publications/CEC-400-2018-020/CEC-400-2018-020-CMF.pdf.

Green Building Standards

Adopted in 2010 and updated annually, the 2013 California Green Building Standards Code (24 CCR Part 11; also referred to as CALGreen)[26] identifies mandatory building measures and voluntary measures that may be incorporated into the design of buildings. Relative to energy usage, CALGreen contains requirements for cool roofs, exterior lighting, bicycle parking, and electric vehicle charging. In addition, CALGreen requires mandatory inspections of energy systems (e.g., heat furnace, air conditioner, and mechanical equipment) for non-residential buildings larger than 10,000 square feet to ensure that all are working at their maximum capacity and according to their design efficiencies.

California Energy Commission Requirements

The California Energy Commission (CEC) is tasked with conducting assessments and forecasts of all aspects of energy industry supply, production, transportation, delivery and distribution, demand, and prices. The CEC uses these assessments and forecasts to develop energy policies that conserve resources, protect the environment, ensure energy reliability, enhance the state's economy, and protect public health and safety (PRC Section 25301(a)).

California Renewable Portfolio Standard

California's Renewable Portfolio Standard,[27] established by Senate Bill (SB) 1078 (Chapter 516, Statutes of 2002), requires retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide a portion of sold electricity from eligible renewable energy resources. SB XI-2, passed in 2011, requires utilities to procure renewable energy products equal to 33 percent of retail sales by December 31, 2020, and also established interim targets of 20 percent by December 31, 2013, and 25 percent by December 31, 2016. The Los Angeles Department of Water and Power (LADWP), the utility provider for the City of Los Angeles, achieved both the three-year average target of 21.6 percent for 2014-2016 and the 25 percent renewable energy milestone in 2016.[28,29] Subsequent legislation further increased the Renewable Portfolio Standard and accelerated its timeframe for implementation. The most recent, SB 100 (Chapter 312, Statutes of 2018), increased the requirement to 50 percent by December 31, 2026, 60 percent by December 31, 2030, and 100 percent by December 31, 2045.

Regulations on Greenhouse Gas Emissions

In addition to the plans, policies, and regulations listed above, California has adopted a wide range of plans, policies, and regulations focused specifically on reducing point- and non-point source GHG emissions. Although such regulations are not specifically focused on reducing energy use, a primary method used to reduce GHG emissions is to reduce fuel input and improve fuel efficiency. As a result, many of these plans, policies, and regulations indirectly reduce energy use and are, therefore, relevant to the analysis of energy.

Such plans, policies, and regulations include various Executive Orders, Assembly Bills, and Senate Bills; and CARB's California Advanced Clean Cars Program, Zero-Emission Airport Shuttle Bus regulation, Zero-Emission Airport Ground Support Equipment measure, and proposed Advanced Clean Trucks Rule.

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[26] 24 California Code of Regulations, Part 11, California Building Standards Commission, *2019 California Green Building Standards Code (CALGreen)*. Available: https://www.dgs.ca.gov/BSC/Resources/Page-Content/Building-Standards-Commission-Resources-List-Folder/CALGreen.

[27] Public Utilities Code, Section 399.11 et seq.

[28] California Energy Commission, *Commission Final Report – Renewables Portfolio Standard Verification Results: Los Angeles Department of Water and Power Compliance Period 2 (2014-2016)*, March 2019. Available: https://ww2.energy.ca.gov/portfolio/documents/verification_results/cp02_2014-2016/pous_reports_cmf.php.

[29] City of Los Angeles, Los Angeles Department of Water and Power, *LADWP Achieves 25 Percent Renewable Energy Milestone*, March 23, 2017. Available: http://www.ladwpnews.com/ladwp-achieves-25-percent-renewable-energy-milestone-2/.

For more information on these plans, policies, and regulations, refer to Section 4.4, *Greenhouse Gas Emissions*.

4.3.3.1.3 Local

Los Angeles Department of Water and Power Plan

LADWP provides electricity to the City of Los Angeles. In 2017, LADWP adopted the *2017 Power Strategic Long-Term Resource Plan* (SLTRP), an energy resource planning document whose goal is to meet the City's future energy needs at the lowest cost and risk consistent with LADWP's environmental priorities and reliability standards.[30] The SLTRP builds upon the prior Power Integrated Resource Plan (IRP), and includes updated renewable energy requirements, electrical load forecasts, and revenue and rate impacts. The SLTRP outlines adequate electricity supply and transmission capability to meet the needs of its customers within the Los Angeles area, including LAX, through 2050.

City of Los Angeles Green Building Code

In December 2013, the Los Angeles City Council approved Ordinance No. 182,849, which updated Chapter IX of the Los Angeles Municipal Code (LAMC) by amending certain provisions of Article 9 to incorporate by reference portions of the 2013 CALGreen Code and also added other miscellaneous conservation-related measures. The code update (referred to as the Los Angeles Green Building Code [LAGBC]) applies to both residential and non-residential development. The Los Angeles Building Code was most recently updated in December 2019 to reflect the 2019 update to the CALGreen Code.[31] The requirements of the adopted LAGBC apply to new building construction, building renovations, and building additions within the City of Los Angeles. The LAGBC contains a wide range of codes related to energy, including measures to directly and indirectly reduce electricity and fuel consumption.

Sustainable City pLAn and the Green New Deal

In 2014, Mayor Eric Garcetti launched the City of Los Angeles' first-ever Sustainable City Plan ("pLAn"). The pLAn was a comprehensive and actionable policy roadmap intended to prepare the City for an environmentally healthy, economically prosperous, and equitable future for all.[32] Mayor Garcetti released the pLAn in April 2015 along with corresponding Executive Directive No. 7 that incorporated the pLAn into City-wide management.[33] Through the pLAn, Mayor Garcetti committed the City to becoming a national leader in carbon reduction and climate action by prioritizing energy efficiency, among other actions.

In 2019, Mayor Garcetti launched the *Green New Deal* as a comprehensive update to the 2015 pLAn.[34] With respect to energy, the *Green New Deal* goals include acceleration of renewable energy targets, acceleration of energy efficient building targets, and increases in zero emission vehicles (ZEVs), among others.

On February 20, 2020, Los Angeles Mayor Eric Garcetti issued Executive Directive No. 25 to accelerate the Green New Deal and adopt new steps and stronger accountability measures to achieve the City's climate

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30 Los Angeles Department of Water and Power, *2017 Power Strategic Long-Term Resource Plan*, December 2017. Available: https://www.ladwp.com/ladwp/faces/ladwp/aboutus/a-power/a-p-integratedresourceplanning?_adf.ctrl-state=k9rvf53qz_51&_afrLoop=11262527660851.

31 City of Los Angeles, *Ordinance 186488*, Adopted December 11, 2019, Effective December 27, 2019. Available: https://www.ladbs.org/forms-publications/publications/codes.

32 City of Los Angeles, Office of the Mayor, Mayor Eric Garcetti, *Sustainable City pLAn, Transforming Los Angeles, Environment - Economy - Equity*, April 8, 2015. Available: https://www.dropbox.com/s/e768n31r3k379w7/the-plan.pdf?dl=0.

33 City of Los Angeles, Office of the Mayor, Mayor Eric Garcetti, *Executive Directive No. 7, Subject: Sustainable City pLAn*, April 8, 2015. Available: https://www.lamayor.org/sites/g/files/wph446/f/page/file/ED7-SustainableCitypLAn.pdf.

34 City of Los Angeles, Office of the Mayor, Mayor Eric Garcetti, *L.A.'s Green New Deal: Sustainable City pLAn*, 2019. Available: http://plan.lamayor.org/sites/default/files/pLAn_2019_final.pdf.

objectives.[35] For example, Executive Directive No. 25 includes measures aimed at reducing building energy use and reducing fossil fuel use through transportation improvements.

LAWA Sustainability Plans and Guidelines

LAWA began formally planning for sustainability in 2007, with adoption of a series of plans and policies. Relevant design policies addressing sustainability were later consolidated into LAWA's *Design and Construction Handbook*,[36] which includes sustainable guidelines for all construction projects. Policies in the *Design and Construction Handbook* that relate to energy consumption include use of grid-based power at construction sites, where feasible, and installation of ground power and pre-conditioned air at new aircraft gates and parking positions.

In 2017, LAWA adopted the *Sustainable Design and Construction Policy,* which requires that new building construction and renovation projects at LAX be designed to Leadership in Energy and Environmental Design® (LEED®) Silver certification or better unless exempted by LAWA's LEED® Review Committee.[37] The policy also identifies criteria for determining policy applicability and specifies sustainability requirements for airport-related construction/non-building projects that are not able to achieve, or are exempt from, LEED®. To complement the *Sustainable Design and Construction Policy*, LAWA developed the *Los Angeles International Airport Sustainable Design and Construction Requirements*.[38] This document provides design and construction requirements for new construction and major renovation projects that are not able to achieve LEED® Silver certification or better, nor LAGBC Tier 1 or better, based on project size and scope.

Also in 2017, LAWA updated the *LAX Alternative Fuel Vehicle Requirement Program*,[39] which requires, with certain exemptions, that all on-road vehicles with a gross vehicle weight rating of 8,500 pounds or more must be alternative fuel or other low emission fuel vehicles, with an engine no older than 13 years old. This requirement applies to trucks, shuttles, passenger vans, and buses used in operation at LAX, and would apply to covered vehicles used at Concourse 0 and Terminal 9. The LAX Alternative Fuel Vehicle Requirement Program does not apply to construction equipment or vehicles.

In December 2019, LAWA entered into a voluntary Memorandum of Understanding (MOU) with the SCAQMD under which LAWA developed Air Quality Improvement Measures (AQIM) to further reduce air pollutant emissions from non-aircraft sources operating at LAX.[40] One component identified in the MOU is the enhanced GSE Emission Reduction Policy,[41] with new GSE airport-wide emission factor targets to be achieved at rates faster than are required under existing off-road equipment standards by 2023 and 2031. Further, these new airport-wide emission factor targets have been formally adopted by the Los Angeles Board of Airport Commissioners as an update to the existing GSE policy and would apply to all GSE used at Concourse 0 and Terminal 9. Although these measures are primarily designed to control nitrogen oxides

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35 City of Los Angeles, Office of the Mayor, Mayor Eric Garcetti, *Executive Directive No. 25, Subject: L.A.'s Green New Deal: Leading by Example*, February 10, 2020. Available: https://www.lamayor.org/sites/g/files/wph446/f/page/file/20200210ExecutiveDirective25.pdf.

36 City of Los Angeles, Los Angeles World Airports, *2020 Design and Construction Handbook (DCH), Version 1.0,* June 30, 2020. Available: https://www.lawa.org/en/lawa-businesses/lawa-documents-and-guidelines/lawa-design-and-construction-handbook.

37 City of Los Angeles, Los Angeles World Airports, *LAWA Sustainable Design and Construction Policy*, September 7, 2017. Available: https://www.lawa.org/-/media/lawa-web/tenants411/file/lawa-sustainable-design-and-construction-policy.ashx.

38 City of Los Angeles, Los Angeles World Airports, *Los Angeles International Airport Sustainable Design & Construction Requirements*, August 4, 2017. Available: https://www.lawa.org/-/media/lawa-web/tenants411/file/sustainable-design-construction-requirements.ashx.

39 City of Los Angeles, Los Angeles World Airports, *Alternative Fuel Vehicle Requirement Program (LAX Only)*, October 16, 2017. Available: https://www.lawa.org/-/media/lawa-web/environment/files/altfuelvehreq.ashx.

40 *Memorandum of Understanding between the South Coast Air Quality Management District and the City of Los Angeles Department of Airports*, December 2019. Available: http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/facility-based-mobile-source-measures/mou-la-department-of-airports.pdf?sfvrsn=6.

41 The MOU enhances the LAX GSE Emissions Reduction Policy originally adopted in 2015, which was the first policy of its kind in the nation. The enhanced policy has more stringent emission factor targets and extends to policy requirements to 2031.

(NO_X) emissions, they would also reduce consumption of fossil fuels. For more information on this MOU, refer to Section 4.1.1, *Air Quality*.

In 2019, LAWA adopted a *Sustainability Action Plan* to address climate change and ensure a healthy, prosperous future for the region.[42] The *Sustainability Action Plan* contains goals and implementation actions to improve energy efficiency, increase renewable energy dependence, improve energy resilience, and demonstrate leadership in energy sustainability.

4.3.3.2 Environmental Setting

4.3.3.2.1 Electricity

Regional Electricity Consumption and Supply

As discussed under Section 4.3.3.1, *Regulatory Setting*, electrical power within the City of Los Angeles (including LAX) is supplied by LADWP, which serves approximately 3.8 million people.[43] Its service area covers a 465-square-mile area in Los Angeles and much of the Eastern Sierra Nevada Mountain range in Owens Valley. LADWP's annual sales exceed 23 million megawatt-hours (MWh) and it is the third largest California electric utility in terms of consumption. LADWP obtains electricity from various generating sources that utilize coal, nuclear, natural gas, hydroelectric, and renewable resources to generate power.

LADWP reports on existing and projected electricity demand in the SLTRP. In 2017, the LADWP service area used approximately 26,010,000 MWh of electricity. LADWP's load forecast in the SLTRP indicates that the power demand within the service area will be approximately 24,738,000 MWh in 2030. LADWP experienced an all-time net energy-for-load peak demand of 6,431 megawatts (MW) on August 31, 2017, and an instantaneous peak demand of 6,555 MW on September 1, 2017. LADWP's projected peak demand growth through 2027 is estimated to be 0.4 percent, or approximately 30 MW per year. By 2027-2028, LADWP projects a Base Case Peak Demand of 6,182 MW. LADWP's installed net dependable generation capacity is 7,531 MW.[44]

LADWP has committed to increasing the share of renewable energy and promoting increased energy efficiency and conservation by its customers. Diversification of LADWP's energy portfolio, increasing electricity from renewable energy, LADWP's demand response program, and new customer energy efficiency measures will help meet all of the City's needs through the SLTRP's planning horizon of 2050. LADWP has adopted a number of initiatives to increase its use of renewable energy resources to support the goals of reducing GHG emissions, reducing reliance on fossil fuels, meeting state mandates requiring all utilities to provide 60 percent of their energy from renewable resources by 2030, and meeting the Los Angeles City Council's directive to explore pathways for LADWP to achieve a 100 percent renewable energy portfolio.

LAX Baseline Electricity Consumption and Supply

Electricity is primarily used at LAX for lighting, cooling, and equipment operation in buildings. Electricity is also used for airfield lighting and operations and indirectly in the delivery, treatment, and distribution of

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42 City of Los Angeles, Los Angeles World Airports, *LAWA Sustainability Action Plan*, 2019. Available: https://cloud1lawa.app.box.com/s/63i2teszgnld5aws68xbou6yc0inl5rp.

43 Los Angeles Department of Water and Power, *2017 Power Strategic Long-Term Resource Plan*, December 2017. Available: https://www.ladwp.com/ladwp/faces/ladwp/aboutus/a-power/a-p-integratedresourceplanning?_adf.ctrl-state=k9rvf53qz_51&_afrLoop=11262527660851.

44 Los Angeles Department of Water and Power, *2017 Power Strategic Long-Term Resource Plan*, December 2017. Available: https://www.ladwp.com/ladwp/faces/ladwp/aboutus/a-power/a-p-integratedresourceplanning?_adf.ctrl-state=k9rvf53qz_51&_afrLoop=11262527660851.

water used at the airport and the treatment of wastewater. Total electricity consumption at LAX in 2018 was approximately 184,727 MWh.[45]

LADWP supplies electrical power to the Project area primarily through Receiving Station "N" (RS-N), which is located on the north side of West Florence Avenue at Isis Avenue, approximately one-half mile north of the Project site. Two 138 kilovolt (kV) subterranean transmission lines along Aviation Boulevard connect RS-N with the Scattergood Generating Station in Playa del Rey. Overhead and underground distribution lines run along rights-of-way throughout the area from RS-N to distribution points, including Distribution Station 111 (DS-111), located on the east side of Vicksburg Avenue between W. 96th and W. 98th Streets. DS-111 provides secondary power to the Project area through high-voltage feeder cables within conduit banks underneath rights-of-way.

LAWA is constructing a new electrical Receiving Station "X" (RS-X) and associated electrical infrastructure improvements in order to address persistent power reliability and capacity issues at LAX. The new RS-X will be located in the northwest corner of LAX property, near the intersection of Westchester Parkway and Pershing Drive, and will accommodate the electrical demand of future infrastructure projects at LAX, including the proposed Airfield and Terminal Modernization Project. The new RS-X will be a purpose-built structure, designed to accommodate 120 megavolt amperes (MVA) of redundant capacity. Construction of the new RS-X will commence in August 2020 and be completed in mid-2023.

In 2015, LAWA completed construction of a new highly energy-efficient Central Utility Plant (CUP) to replace LAX's 50-year old CUP. The new CUP became fully operational in September 2015. The new CUP utilizes co-generation technology to produce and deliver heating and cooling to existing terminals and other buildings within the Central Terminal Area (CTA). Natural gas powers two combustion turbine generators to generate electricity, which is used to power multiple chillers. A pair of steam generators captures and reuses the heat exhaust from the combustion for heating. The new CUP is 25 percent more energy efficient and more environmentally-friendly than the former facility. The new CUP is considered the first sustainable utility plant at a U.S. airport.[46]

4.3.3.2.2 Natural Gas

Regional Natural Gas Consumption and Supply

The Southern California Gas Company (SoCalGas), a subsidiary of Sempra Energy, supplies natural gas to nearly all of Southern and Central California, including the City of Los Angeles. In 2017, SoCalGas delivered approximately 2,504 million cubic feet (MMcf) of natural gas per day.[47] SoCalGas projects total gas demand to decline at an annual rate of 0.74 percent from 2018 to 2035. The decline in demand is due to modest economic growth, mandated energy efficiency standards and programs, Title 24 Codes and Standards, renewable electricity goals, and conservation savings linked to Advanced Metering Infrastructure.

SoCalGas obtains the majority of its natural gas from out-of-state sources, with roughly 97 percent of delivered natural gas sourced from out-of-state. Projections indicate that SoCalGas delivery requirements in 2025 and 2035 will be approximately 2,422 MMcf per day and 2,313 MMcf per day, respectively. SoCalGas' projected supply capacity in 2025 and 2035 is 3,775 MMcf per day for both years. These projections indicate that the projected natural gas supplies will be adequate to meet the projected demand within the SoCalGas service area in 2025 and 2035.

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45 City of Los Angeles, Los Angeles World Airports, *Los Angeles World Airports 2018 Sustainability Report*. Available: https://cloud1lawa.app.box.com/v/2018-Sustainability-Report.

46 City of Los Angeles, Los Angeles World Airports, *Los Angeles World Airports Sustainability Report 2015.* Available: https://www.lawa.org/lawa-sustainability/resources.

47 The California Gas and Electric Utilities, *2018 California Gas Report*, 2018. Available: https://www.socalgas.com/regulatory/documents/cgr/2018_California_Gas_Report.pdf.

LAX Baseline Natural Gas Consumption and Supply

Natural gas is primarily used at LAX for electricity generation, space heating, food preparation, and maintenance activities. Natural gas is also consumed by some medium- and heavy-duty GSE and is used at the CUP. Total natural gas consumption at LAX in 2018 was approximately 493 MMcf.[48]

4.3.3.2.3 Mobile Source and Transportation-Related Fuels

A variety of mobile source and transportation-related fuels are used at LAX: Jet A for aircraft and gasoline, diesel, and alternative fuels for automobiles, trucks, APUs, and other GSE. In addition, passenger vehicle trips associated with the airport require fuel, mainly gasoline and diesel.

Supplies of Jet A, gasoline, diesel, and alternative fuels are dependent on energy reserves, both domestic and international. Fuels used for ground transportation vehicles are delivered, stored, and consumed in a distributed manner, as ground transportations functions are performed by a range of airport and non-airport vehicles. Aviation jet fuel at LAX is managed and supplied by LAXFUEL Corporation. LAXFUEL dispensed approximately 2 trillion gallons of aviation jet fuel to aircraft at LAX in 2018.[49]

Table 4.3-1 shows the existing estimated annual fuel consumption at LAX in 2018. The estimated fuel consumption was derived based on outputs from the transportation analysis presented in Section 4.8, *Transportation,* and from the GHG emissions analysis presented in Section 4.4, *Greenhouse Gas Emissions*.

Table 4.3-1
Existing Fuel Consumption and Energy Use (2018)

Source	Fuel Type	Fuel Consumption (gallons per year)	Total Energy Use (MMBtu)[1]
Aircraft	Jet A	95,068,497	12,834,247
APUs	Jet A	4,610,978	622,482
GSE	Diesel	1,008,728	138,580
	Gasoline	1,407,398	174,986
Motor Vehicles[2]	Diesel	11,137,876	1,530,132
	Gasoline	111,237,785	13,830,565

Source: **Appendix C** of this EIR.

Notes:

1 Total energy use is the fuel use converted to million British Thermal Units (MMBtu) for each year based on conversion factors published in the U.S. Energy Information Administration, *Monthly Energy Review*, Appendix A01, February 2020.

2 Motor vehicles source includes all landside motor vehicle traffic, including LAX fleet vehicles, LAX employee vehicles, LAX passenger vehicles, shuttles, taxis, TNCs, and all other on-road vehicles. Refer to Section 4.8, *Transportation,* for further analysis of vehicle traffic.

4.3.4 Thresholds of Significance

A significant energy use impact would occur if the proposed Project would:

Threshold 4.3-1 Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation.

48 City of Los Angeles, Los Angeles World Airports, *Los Angeles World Airports 2018 Sustainability Report*. Available: https://cloud1lawa.app.box.com/v/2018-Sustainability-Report.

49 **Appendix C** of this EIR.

Threshold 4.3-2 Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

These thresholds are from Appendix G of the State CEQA Guidelines.

4.3.5 Project Impacts

4.3.5.1 Impact 4.3-1

Summary Conclusion for Impact 4.3-1: The proposed Project would not result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation. As such, this would be a *less than significant impact* for construction and operations.

4.3.5.1.1 Construction

Electricity

Electricity would be consumed during Project construction in association with electric power tools/equipment and construction offices/trailers/parking area lighting. Electrically-powered construction equipment is not common and is typically limited to small devices and tools. Electricity consumption associated with Project construction would be relatively small. As required by state and local regulations and policies, electricity supplied to the proposed Project would comply with California's Renewable Portfolio Standard. Moreover, in accordance with LAWA's *Design and Construction Handbook*,[50] every effort would be made to use grid-based electric power at the construction sites, where feasible. Grid-based power would be from a direct hookup or a tie-in to electricity from power poles. The proposed Project would be constructed in accordance with state regulations for renewable energy and energy efficiency, including Title 24 Building Energy Efficiency Standards and CALGreen. Construction of the proposed Project would also proceed in compliance with local regulations that include requirements for renewable energy and energy efficiency, including the LAMC and the LAGBC. With adherence to these codes and with compliance with LAWA's *Design and Construction Handbook*, the proposed Project would not result in wasteful, inefficient, or unnecessary consumption of electricity.

Natural Gas

Natural gas would be consumed during Project construction by liquefied or compressed natural gas in some vehicles and construction equipment. Use of natural gas during proposed Project construction would be relatively small. The proposed Project would be constructed in accordance with state regulations for renewable energy and energy efficiency, including Title 24 Building Energy Efficiency Standards and CALGreen. Construction of the proposed Project would also proceed in compliance with local regulations that include requirements for renewable energy and energy efficiency, including the LAMC, the LAGBC, LAWA's *Design and Construction Handbook*, and the *LAX Alternative Fuel Vehicle Requirement Program*. As a result, construction of the proposed Project would not result in wasteful, inefficient, or unnecessary consumption of natural gas.

Mobile Source and Transportation-Related Fuels

Vehicle Trips and Construction Equipment Usage

Mobile source and transportation-related fuels would be consumed during Project construction by construction equipment and construction worker, vendor, and haul trips to and from construction sites. Vehicle and transportation-related fuels would primarily include diesel and gasoline. Although some of

[50] City of Los Angeles, Los Angeles World Airports, *2020 Design and Construction Handbook (DCH), Version 1.0,* June 30, 2020. Available: https://www.lawa.org/en/lawa-businesses/lawa-documents-and-guidelines/lawa-design-and-construction-handbook.

the on-road haul trucks may use alternative fuels, all vehicles and construction equipment were assumed to be fueled by gasoline or diesel for the purposes of calculating fuel demand, as no methodology exists for estimating the percentage of alternative-fueled vehicles that would be associated with Project construction.[51]

The methodology for calculating fuel consumption during construction is detailed in Section 4.3.2.2.1. Total construction-related fuel consumption across all construction phases is presented in **Table 4.3-2**. Data regarding construction-related fuel consumption are provided in **Appendix C** of this EIR.

Table 4.3-2
Construction Period Fuel Consumption and Energy Use

Year	Diesel Fuel (gallons)[1]	Gasoline Fuel (gallons)[1]	Total Energy Use (MMBtu)[2]
2021	295,824	76,982	50,681
2022	672,478	295,409	130,222
2023	1,079,595	677,180	234,361
2024	862,413	720,452	209,596
2025	507,566	458,685	127,679
2026	189,243	164,933	46,845
2027	100,569	90,604	25,263
2028	139	284	55
Total[3]	**3,707,826**	**2,484,529**	**824,702**

Source: **Appendix C** of this EIR.

Notes:

1 Fuel estimates derived from the construction GHG emissions analysis using U.S. Environmental Protection Agency, *Emission Factors for Greenhouse Gas Inventories*, March 9, 2018.

2 Total energy use is the combined energy of the estimated diesel fuel use and gasoline fuel use converted to MMBtu for each year based on conversion factors published in the U.S. Energy Information Administration, *Monthly Energy Review*, Appendix A01, February 2020.

3 Numbers may not add due to rounding.

As shown in Table 4.3-2, diesel and gasoline fuel usage is estimated to increase during the first few years of construction, peak roughly four years into the construction period, and then decline toward the end of the construction period. Construction of the proposed Project would consume an estimated 3,707,826 gallons of diesel fuel and 2,484,529 gallons of gasoline across all construction phases, representing a total energy use of approximately 824,702 MMBtu. All construction activities were assumed to use diesel or gasoline fuels.

Construction activities for the proposed Project would comply with federal and state vehicle fuel efficiency standards. The proposed Project's construction activities would also comply with LAWA's *Sustainable Design and Construction Policy* and the *Los Angeles International Airport Sustainable Design and Construction Requirements*, as applicable. With compliance with federal and state standards and LAWA sustainability requirements, construction of the proposed Project would not result in wasteful, inefficient, or unnecessary consumption of mobile source and transportation-related fuels.

Operational Fuel Demand During Construction

As described in Chapter 2, *Description of the Proposed Project*, construction of the airfield improvements would require the temporary closure of Runway 6L-24R for approximately 4.5 months in 2023. During this

51 This assumption also provides for a conservative approach for estimating air pollutant emissions.

time, aircraft operations at LAX would occur on three runways (i.e., one runway in the north airfield and two runways in the south airfield). The temporary closure of the runway would increase the distances that aircraft would taxi, as some aircraft activity that would normally occur on Runway 6L-24R (i.e., the outboard runway) would be shifted to Runway 6R-24L (i.e., the inboard runway). Moreover, three-runway operations would be less efficient, resulting in a temporary increase in aircraft taxi-idle times.

There would be a similar temporary closure of Runway 6R-24L in 2024 of the same duration (i.e., 4.5 months). This closure would shift some aircraft activity from Runway 6R-24L to Runway 6L-24R. Because Runway 6L-24R is closer to the terminals, some taxi distances would decrease as compared to normal operations. However, as noted above, three-runway operations would be less efficient, which would increase aircraft taxi-idle times.

During these interim periods of temporary runway closures, the increase in taxiing distance and increase in aircraft taxi-idle times would result in an increase in consumption of Jet A, equating to a temporary increase in energy usage. Because temporary runway closures would be necessary to complete the Project in a safe manner, the corresponding increase in energy usage would not be wasteful, inefficient, or unnecessary.

Summary

As described above, construction of the proposed Project would require the use of electricity, natural gas, and mobile source and transportation-related fuels. Electricity and natural gas consumption from construction activities would be relatively minor because neither electricity nor natural gas are common energy sources for powering construction equipment and vehicles. As required by state and local regulations and policies, electricity supplied to the proposed Project would comply with California's Renewable Portfolio Standard.

The majority of energy use during the construction period would consist of diesel and gasoline fuel used to power construction equipment and vehicles and a temporary increase in Jet A use during the temporary runway closures. The proposed Project's construction activities would comply with federal and state regulations pertaining to energy efficiency, including those related to fuel efficiency. In addition, construction activities would comply with LAWA's *Design and Construction Handbook, Sustainable Design and Construction Policy*, and *Sustainable Design and Construction Requirements*. Therefore, the proposed Project would not result in wasteful, inefficient, or unnecessary consumption of energy resources during the construction period and the impact to energy resources would be ***less than significant***.

4.3.5.1.2 Operations

Electricity

Direct Impacts

The proposed Project would consume electricity during operations, primarily from powering the building systems for Concourse 0 and Terminal 9, providing electrified gates, and providing lighting the Terminal 9 parking facility, as well as hookups for plug-in hybrid and ZEV for in accordance with the Los Angeles Building Code. There would also be electricity consumption associated with illuminated taxiway signage and pathway markers for the new additional exits at Runway 6L-24R and the westerly extension of Taxiway D.

As discussed in Section 4.3.2, electricity demand associated with Concourse 0 and Terminal 9 was calculated based on historic electricity consumption data, LAX-specific electricity demand factors, and the square footage of the proposed new concourse and terminal buildings. Electricity demand for the Terminal 9 parking facility was estimated using CalEEMod factors. Electricity consumption related to the

airfield improvements would be negligible and was not calculated. **Table 4.3-3** shows the Concourse 0 and Terminal 9 components, the estimated electricity demand for each component based on the demand factors, and the total operational electricity use for Concourse 0 and Terminal 9.

Table 4.3-3
Operational Electricity Consumption and Energy Use for Concourse 0 and Terminal 9

Component	Floor Area (square feet)[1]	Demand Factor (kWh per square foot per year)[2]	Estimated Electricity Demand (kWh per year)	Total Energy Use (MMBtu per year)[3]
Concourse 0	1,275,600	13.60	17,348,160	59,194
Terminal 9	1,413,600		19,224,960	65,598
Terminal 9 Parking Facility	700,000	6.74	4,718,000	16,098
Total			**41,291,120**	**140,890**

Source: CDM Smith, July 2020.

Notes:

1 Floor area estimate includes a 20 percent increase to the planned floor area to account for design refinement (discussed in Chapter 2, *Description of the Proposed Project*). In order to provide a conservative estimate of electricity consumption, the floor area for the Terminal 9 parking facility assumes that the facility would be a multi-level parking garage. If the facility is a surface parking lot, electricity consumption would be lower.

2 For Concourse 0 and Terminal 9, an LAX-specific demand factor was used based on historic total electricity consumption at the Tom Bradley International Terminal averaged over calendar years 2016 and 2018. For the Terminal 9 parking facility, the CalEEMod Appendix D demand factor for enclosed parking structure with elevator was used. Energy consumption associated with the airfield improvements and the Terminal 9 APM Station, which would only be a boarding/deboarding platform, would be negligible.

3 Total energy use is the energy of the estimated electricity use converted to MMBtu. The value of 3,412 Btu per kilowatt-hour (kWh) is a constant; it is used as the thermal conversion factor for electricity retail sales and electricity imports and exports.

As shown in Table 4.3-3, operation of Concourse 0 and Terminal 9, including the Terminal 9 parking facility, would consume approximately 41,291,120 kWh of electricity per year. This would represent an annual energy use of approximately 140,890 MMBtu per year.

As noted above, electricity demand associated with Concourse 0 and Terminal 9 was calculated using an LAX-specific demand factor. Although this methodology provides the most accurate estimate of future terminal electricity consumption available, the demand factor is based on historic consumption data from the Tom Bradley International Terminal, which was originally constructed in 1984 and upgraded over the years, including major improvements to Bradley West in 2016. As a result, the proposed Concourse 0 and Terminal 9 would likely be more energy efficient than reflected by the demand factor used in this analysis. Moreover, the energy demand identified in Table 4.3-3 does not account for reductions in electricity associated with the removal of buildings that would be required to be demolished as part of the proposed Project or for energy efficiency measures that may be required to obtain LEED® Silver certification. For these reasons, total energy demand associated with electricity consumption would likely be lower than estimated.

In accordance with LAWA's *Sustainable Design and Construction Policy*, Concourse 0 and Terminal 9 would be constructed with energy-efficiency measures required to meet LEED® Silver certification requirements or better. As part of this certification, the buildings would be required to undergo fundamental commissioning and verification, be designed to consume less energy than conventional buildings,[52] and

52 Conventional building energy consumption is calculated based on procedures identified in the LEED® rating system framework; a conventional building represents a typical building constructed without energy-efficient measures and serves as a baseline against which to measure energy-efficiency improvements.

be constructed with building-level energy metering.[53] In addition, as identified in Chapter 2, *Description of the Proposed Project*, Concourse 0 and Terminal 9 would be equipped with smart energy meters that are intended to better manage energy consumption. These requirements would ensure that the facilities would not result in wasteful, inefficient, or unnecessary consumption of electricity during operations.

Indirect Impacts

LAWA does not directly consume electricity to supply, treat, or distribute water, nor to convey or treat wastewater; however, the proposed Project would increase the water and wastewater treatment demand compared to baseline conditions, thereby indirectly increasing the electricity consumed for these activities. As noted in Section 4.3.2.1, electricity demand associated with water supply and wastewater treatment was calculated using energy intensity factors from CalEEMod. Resulting electricity demand associated with water supply and wastewater treatment is provided in **Table 4.3-4**.

Table 4.3-4
Electricity Consumption Associated with Operational Water Supply and Wastewater Treatment

Source	Estimated Project Demand (thousand gallons per year)	Supply Demand Factor (kWh per thousand gallons per year)[2]	Treatment Demand Factor (kWh per thousand gallons per year)[2]	Distribution Demand Factor (kWh per thousand gallons per year)[2]	Estimated Electricity Demand (kWh per year)	Total Energy Use (MMBtu per year)[3]
Water	30,955.8	5.922	0.111	1.272	226,132	772
Wastewater Treatment[1]	30,955.8	n/a	1.911	n/a	59,157	201
Total					**285,289**	**973**

Sources: **Appendix H** of this EIR; CDM Smith, July 2020.
Notes:
1 For the purposes of this analysis, the wastewater generation volume was assumed to equal the water demand volume.
2 Demand factors are derived from CalEEMod, July 2020.
3 Total energy use is the energy of the estimated electricity use converted to MMBtu. The value of 3,412 Btu per kWh is a constant; it is used as the thermal conversion factor for electricity retail sales and electricity imports and exports.

As discussed in Section 4.9, *Utilities*, the proposed Project is estimated to increase net water demand by 95 acre-feet or 30,955 thousand gallons per year in 2028 and increase wastewater generation by the same amount. The increase in estimated water and wastewater treatment demand associated with the proposed Project would result in indirect electricity consumption of approximately 285,289 kWh per year, equivalent to approximately 973 MMBtu per year. The water conservation measures described in Section 4.9, *Utilities*, would reduce the water supply and wastewater treatment demand, thereby reducing the accompanying indirect electricity demand. Moreover, as noted above, as required by state and local regulations and policies, electricity use related to water use and wastewater treatment would comply with California's Renewable Portfolio Standard. For these reasons, with respect to energy demand related to the supply, treatment, and distribution of water and treatment of wastewater, the proposed Project would not result in wasteful, inefficient, or unnecessary consumption of electricity.

Natural Gas

The proposed Project would consume natural gas during operations, primarily related to water heaters, appliances, and natural gas-fueled boilers, which would provide heating and hot water to Concourse 0

[53] U.S. Green Building Council, *LEED v4 for Building Design and Construction*, July 25, 2019. Available: https://www.usgbc.org/sites/default/files/LEED%20v4%20BDC_07.25.19_current.pdf.

and Terminal 9.[54] As discussed in Section 4.3.2, natural gas demand associated with Concourse 0 and Terminal 9 was calculated based on historic natural gas consumption data, LAX-specific natural gas demand factors, and the square footage of the proposed new concourse and terminal buildings. **Table 4.3-5** shows the Concourse 0 and Terminal 9 components, the estimated natural gas demand for each component based on the demand factors (in standard cubic feet [scf]), and the total operational natural gas use for Concourse 0 and Terminal 9.

Table 4.3-5
Operational Natural Gas Consumption and Energy Use for Concourse 0 and Terminal 9

Component	Floor Area (square feet)[1]	Demand Factor (scf per square foot per year)[2]	Estimated Natural Gas Demand (scf per year)	Total Energy Use (MMBtu per year)[3]
Concourse 0	1,275,600	3.4	4,337,040	4,493
Terminal 9	1,413,600		4,806,240	4,979
Total			**9,143,280**	**9,472**

Source: CDM Smith, July 2020.

Notes:

1 Floor area estimate includes a 20 percent increase to the planned floor area to account for design refinement (discussed in Chapter 2, *Description of the Proposed Project*).

2 An LAX-specific demand factor was used based on historic total natural gas consumption at the Tom Bradley International Terminal averaged over calendar years 2016 and 2018.

3 Total energy use is the combined energy of the estimated diesel use and gasoline use converted to MMBtu for each year based on *Carbon Dioxide Emissions Coefficients* published by the U.S. Energy Information Administration. Available: https://www.eia.gov/environment/emissions/co2_vol_mass.php.

As shown in Table 4.3-5, operation of Concourse 0 and Terminal 9 would consume approximately 9,143,280 scf of natural gas per year for operations. This would represent an annual energy use of approximately 9,472 MMBtu per year.

Similar to the estimation of electricity demand, the methodology used an LAX-specific demand factor from Tom Bradley International Terminal and did not account for reduction in natural gas use associated with the removal of buildings that would be required to be demolished as part of the proposed Project. Moreover, the natural gas demand estimated in Table 4.3-5 does not account for energy efficiency measures that may be required to obtain LEED® Silver certification. Therefore, total energy demand associated with natural gas consumption at Concourse 0 and Terminal 9 would likely be lower than estimated.

In accordance with LAWA's *Sustainable Design and Construction Policy*, Concourse 0 and Terminal 9 would be constructed with energy-efficiency measures required to meet LEED® Silver certification requirements or better. This requirement would ensure that the facilities would not result in wasteful, inefficient, or unnecessary consumption of natural gas during operations.

Mobile Source and Transportation-Related Fuels

The proposed Project would consume mobile source and transportation-related fuels during operations, primarily by aircraft, APUs, GSE, and automobiles and trucks. As discussed in Section 4.3.2, mobile source and transportation-related fuel usage was derived from the estimated operational GHG emissions discussed and analyzed in Section 4.4, *Greenhouse Gas Emissions*. **Table 4.3-6** shows the estimated operational fuel consumption for future year 2028, the change in fuel consumption compared to existing

54 The CUP does not have capacity to provide heating and cooling to Concourse 0 and Terminal 9. Heating and cooling would be provided by natural gas-fueled boilers.

conditions, and the total energy use for the proposed Project. The estimated fuel consumption was derived by applying USEPA carbon content factors to the estimated GHG emissions for each year for the corresponding source fuel type.[55] The total energy use was calculated based on the estimated gallons of fuel that would be consumed.

Table 4.3-6
Operational Vehicle and Transportation-Related Fuel Consumption and Energy Use

Year	Source	Fuel Type	Estimated Fuel Consumption (gallons per year)	Fuel Consumption Change Compared to Baseline (2018) Conditions (gallons per year)	Total Change in Energy Use (MMBtu per year)[2]
2028	Aircraft	Jet A	114,094,384	19,025,887	2,568,495
	APUs	Jet A	4,885,534	274,556	37,065
	GSE	Diesel	660,410	(348,318)	(47,852)
		Gasoline	964,874	(442,524)	(55,020)
	Motor Vehicles[1]	Diesel	7,647,825	(3,490,051)	(479,467)
		Gasoline	103,281,882	(7,955,903)	(989,184)

Source: CDM Smith, July 2020.

Notes:

[1] Motor vehicles source includes all landside motor vehicle traffic, including LAX fleet vehicles, LAX employee vehicles, LAX passenger vehicles, shuttles, taxis, TNCs and all other on-road vehicles. Refer to Section 4.8, *Transportation,* for further analysis of vehicle traffic.

[2] Total energy use is the combined energy of the estimated fuel use converted to MMBtu based on conversion factors published in the U.S. Energy Information Administration, *Monthly Energy Review*, Appendix A01, February 2020.

As shown in Table 4.3-6, in 2028, aircraft would consume an estimated 114,094,384 gallons of Jet A, APUs would consume an estimated 4,885,534 gallons of Jet A, GSE would consume an estimated 660,410 gallons of diesel fuel and 964,874 gallons of gasoline, and motor vehicles would consume an estimated 7,647,825 gallons of diesel fuel and 103,281,882 gallons of gasoline. Compared to baseline conditions in 2018, 2028 conditions would see reductions in diesel and gasoline consumption from both GSE and motor vehicles and an increase in Jet A consumption from both aircraft and APUs.

The reduction in estimated diesel and gasoline fuel consumption from motor vehicles between 2018 and 2028 is largely attributable to continued trends in fuel efficiency driven by market factors and regulations, overall improvements in engine efficiency, and increased reliance on electric power. In addition, the *LAX Alternative Fuel Vehicle Requirement Program* would reduce fossil fuel consumption from airport-related light/medium-duty vehicles and above, although these benefits are not reflected in the calculations. The reduction in diesel and gasoline fuel consumption from GSE is largely attributable to implementation of the enhanced GSE Emission Reduction Policy, which requires reductions in GSE-related emissions at LAX and is expected to reduce GSE-related fossil fuel consumption.

Table 4.3-6 shows an anticipated increase in the amount of Jet A that would be consumed in 2028. As described in Chapter 2, *Description of the Proposed Project,* passenger activity levels and aircraft operations in 2028 are projected to occur with or without the Project. Therefore, this increase is not attributable to the proposed Project; rather, the increase in Jet A consumption would occur in 2028 regardless of whether the proposed Project is constructed.

[55] U.S. Environmental Protection Agency, *Emission Factors for Greenhouse Gas Inventories*, March 9, 2018. Available: https://www.epa.gov/sites/production/files/2018-03/documents/emission-factors_mar_2018_0.pdf.

The estimate of future mobile source and transportation-related fuel consumption associated with the proposed Project is subject to a wide range of potential factors that may influence the actual fuel future consumption statistics. Nationwide, and particularly in California, vehicles are transitioning to electric and alternative fuel technologies; alternative fuel, plug-in electric, and fully electric vehicles are readily available to both the consumer retail and commercial and industrial fleet markets. As discussed in Section 4.3.3.1, the City of Los Angeles and LAWA have requirements and measures in place that are anticipated to reduce mobile source and transportation-related fuel consumption. Therefore, the proposed Project would not result in wasteful, inefficient, or unnecessary consumption of mobile source and transportation-related fuels.

Summary

As described above, during operations, the proposed Project would require the use of electricity, natural gas, and mobile source and transportation-related fuels. Electricity and natural gas consumption would result primarily from the operation of Concourse 0 and Terminal 9. As required by state and local regulations and policies, electricity supplied to the proposed Project would comply with California's Renewable Portfolio Standard. Compliance with state and local building codes pertaining to energy efficiency, including Title 24, the California Building Energy Efficiency Standards, CALGreen, and the City of Los Angeles Green Building Code; adherence to LAWA policies, including the *Sustainable Design and Construction Policy*, which would require Concourse 0 and Terminal 9 to achieve LEED® Silver certification or better; and installation of smart energy meters would reduce the estimated overall electricity and natural gas demand.

Mobile source and transportation-related fuels consumption would result primarily from fuel used to power aircraft, APUs, GSE, and motor vehicles. Existing and anticipated fuel efficiency standards and LAWA policies, including the *LAX Alternative Fuel Vehicle Requirement Program*, and the enhanced GSE Emission Reduction Policy would reduce the demand for diesel and gasoline during Project operations. In addition, the proposed Project would include features that would encourage the use of alternative fuel vehicles by passengers, thereby reducing fuel consumption. Specifically, the proposed Terminal 9 parking facility would be constructed in compliance with the Los Angeles Building Code and the incorporated portions of CALGreen, which include specific requirements for the accommodation of electric and alternative fuel vehicles. Concourse 0 and Terminal 9 would be constructed to LEED® Silver or better certification standards, which may require additional parking accommodations.

Although the proposed Project would increase overall energy use, LAWA's existing sustainability policy and project features would reduce energy use in the form of building energy efficiency improvements and reductions in mobile source and transportation-based fuel consumption. The proposed Project's operational activities would comply with federal, state, and local regulations for energy efficiency. In addition, electricity supplied to the proposed Project would be required to comply with California's Renewable Portfolio Standard.

As discussed in Section 4.3.3.1, measures to improve air quality or reduce GHG emissions also often have an added benefit of reducing energy consumption. Several of the mitigation measures described in other sections of this EIR (Section 4.1.1, *Air Quality*, and Section 4.8, *Transportation)* would have supplemental benefits of reducing the proposed Project's energy consumption. Although the proposed Project would require energy use, it would not result in wasteful, inefficient, or unnecessary consumption of energy resources; therefore, the impact would be ***less than significant***.

4.3.5.1.3 Mitigation Measures

Because the proposed Project would result in a ***less than significant impact*** related to the potential for the Project to result in a significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, no mitigation is required for construction or operations. However, it

should be noted that mitigation measures that are recommended to reduce air pollutant emissions, GHG emissions, and transportation impacts would also reduce energy consumption. The following mitigation measures would have a positive effect on energy efficiency, or directly or indirectly reduce energy consumption.

As described in Section 4.1.1, *Air Quality,* and/or Section 4.4, *Greenhouse Gas Emissions*:

- MM-AQ/GHG (ATMP)-1. Rock Crushing Operations
- MM-AQ/GHG (ATMP)-2. Use of Renewable Diesel Fuel
- MM-AQ/GHG (ATMP)-3. Parking Cool Roof
- MM-AQ/GHG (ATMP)-4. EV Charging Infrastructure
- MM-AQ/GHG (ATMP)-5. Electric Vehicle Purchasing
- MM-AQ/GHG (ATMP)-6. Solar Energy Production

As described in Section 4.8, *Transportation*:

- MM-T (ATMP)-1. VMT Reduction Program

4.3.5.1.4 Significance of Impact After Mitigation

As indicated above, no mitigation is required to address the potential for the Project to result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources. The proposed Project would result in a ***less than significant impact*** for construction and operations.

4.3.5.2 Impact 4.3-2

Summary Conclusion for Impact 4.3-2: The proposed Project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. As such, there would be *no impact* for construction and operations.

4.3.5.2.1 Construction and Operations

As described in Section 4.3.3.1, energy use is influenced by a wide range of plans, policies, and regulations associated specifically with energy use, but also associated with effects to other resource areas, such as GHG emissions, air quality, or water conservation. As a result, energy may be a component of plans, policies, or regulations with a narrow focus (such as those for land development, building standards, or appliances), or with a broad focus (such as those for vehicle emissions, climate change, or sustainability). As such, there are numerous adopted state and local plans that include policies, strategies, and other measures supportive of renewable energy and energy efficiency.

During construction and operations, the proposed Project would comply with state regulations for renewable energy or energy efficiency, including Title 24 Building Energy Efficiency Standards, CALGreen, and applicable regulations related to GHG emissions that also pertain to energy consumption. The proposed Project would also comply with local regulations for renewable energy and energy efficiency, including the LAMC and the LAGBC, and with LAWA's sustainability plans, including the *Sustainable Design and Construction Policy*, *Sustainable Design and Construction Requirements*, *Sustainability Action Plan*, and the *Alternative Fuel Vehicle Requirement Program*. Moreover, the Project would not interfere with LADWP's work toward meeting the Renewable Portfolio Standard targets.

Project operations would comply with requirements pertaining to energy efficiency in buildings, including the Title 24 Building Energy Efficiency Standards, CALGreen, and the City of Los Angeles Green Building Code. Project design would also comply with LAWA sustainability policies, including the *Sustainable Design and Construction Policy*. In accordance with these requirements, Concourse 0 and Terminal 9 would be required to achieve certification at LEED® Silver level or better, Project-related light/medium-duty vehicles used during construction would comply with the *LAX Alternative Fuel Vehicle Requirement Program*, and Project-related GSE would comply with the enhanced GSE Emission Reduction Policy. Energy efficiency and conservation measures implemented as part of the proposed Project would reduce energy use associated with the new construction and contribute to the ongoing efforts to increase energy efficiency at LAX.

The proposed Project includes components that would support regional energy efficiency objectives by providing an additional APM station and inter-terminal access way at the proposed Terminal 9 to encourage non-motor vehicle travel into and out of the CTA. The proposed Project would incorporate measures that would be supportive of state and local efforts to increase use of renewable energy and improve energy efficiency, including building core and shell energy efficiency, energy-efficient appliances, parking spaces for electric and alternative fuel vehicles, and additional mandatory and voluntary measures under the LAGBC and LEED®. The proposed Project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. As such, the proposed Project would have ***no impact*** from construction and operations.

4.3.5.2.2 Mitigation Measures

Because the proposed Project would result in ***no impact*** related to the potential for the Project to conflict with or obstruct a state or local plan for renewable energy or energy efficiency, no mitigation is required for construction or operations.

4.3.5.2.3 Significance of Impact After Mitigation

As indicated above, no mitigation is required to address the potential for the Project to conflict with or obstruct a state or local plan for renewable energy or energy efficiency. The proposed Project would result in ***no impact*** for construction and operations.

4.3.6 Cumulative Impacts

Table 3-1 in Chapter 3, *Overview of Project Setting*, identifies projects at and immediately adjacent to LAX that could, in conjunction with the proposed Project, result in cumulative impacts. As with the proposed Project, these other projects would be required to comply with the energy conservation and renewable energy regulations and policies described in Section 4.3.3.1.

As discussed in Section 4.3.5, the proposed Project is not anticipated to individually result in wasteful, inefficient, or unnecessary consumption of energy resources, nor is the proposed Project anticipated to individually obstruct or conflict with state or local plans for renewable energy or energy efficiency. Although some of the cumulative projects at and adjacent to LAX would consume energy, as with the proposed Project, these projects would also not result in wasteful, inefficient, or unnecessary consumption of energy resources, nor obstruct or conflict with state or local plans for renewable energy

or energy efficiency.[56, 57, 58, 59, 60, 61, 62] Therefore, cumulative impacts related to energy associated with the proposed Project, in combination with ongoing and future projects at LAX and in the immediate vicinity, would be ***less than significant***.

4.3.7 Summary of Impact Determinations

Table 4.3-7 summarizes the impact determinations of the proposed Project related to energy, as described above in Sections 4.3.5 and 4.3.6. Impact determinations are based on the significance criteria presented in Section 4.3.4, and the information and data sources cited throughout Section 4.3.

Table 4.3-7
Summary of Impacts and Mitigation Measures Associated with the Proposed Project Related to Energy

Environmental Impacts	Impact Determination	Mitigation Measures	Level of Significance After Mitigation
Impact 4.3-1: The proposed Project would not result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operations. As such, this would be a ***less than significant impact*** for construction and operations.	Less than Significant	No mitigation is required	Less than Significant
Impact 4.3-2: The proposed Project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. As such, there would be ***no impact*** for construction and operations.	No Impact	No mitigation is required	No Impact

56 City of Los Angeles, Los Angeles World Airports, *Final Environmental Impact Report for Los Angeles International Airport (LAX) Northside Plan Update*, (SCH 2012041003), Section 4.15 – Utilities and Services, December 2014. Available: https://www.lawa.org/en/lawa-our-lax/environmental-documents/documents-certified/lax-northside-plan-update/environmental-documents.

57 City of Los Angeles, Los Angeles World Airports, *Final Environmental Impact Report for Los Angeles International Airport (LAX) Terminals 2 and 3 Modernization Project*, (SCH 2016081034), Section 6.5 – Energy Impacts and Conservation, June 2017. Available: https://www.lawa.org/en/lawa-our-lax/environmental-documents/documents-certified/lax-terminal-2-and-3-modernization.

58 City of Los Angeles, Los Angeles World Airports, *Final Environmental Impact Report for Los Angeles International Airport (LAX) Landside Access Modernization Program*, (SCH 2015021014), Section 4.13.2 – Energy/Appendix F, February 2017. Available: https://www.lawa.org/en/connectinglax/automated-people-mover/documents.

59 City of Los Angeles, Los Angeles World Airports, *Final Negative Declaration for the Los Angeles International Airport Terminal 4 Modernization Project,* Section 4.6 – Energy, July 2020. Available: https://www.lawa.org/en/lawa-our-lax/environmental-documents/current-projects/terminal-4-modernization-project.

60 City of Los Angeles, Los Angeles World Airports, *Final Environmental Impact Report for Los Angeles International Airport (LAX) Midfield Satellite Concourse*, (SCH 2013021020), Section 4.2 – Greenhouse Gas Emissions, and Section 6.0 – Other Environmental Considerations, June 2014. Available: https://www.lawa.org/en/lawa-msc-north/project-documents.

61 Los Angeles County Metropolitan Transportation Authority, *Airport Metro Connector 96th Street Transit Station Draft Environmental Impact Report*, (SCH 2015021009), Section 4.4.12 – Energy Resources, June 2016. Available: https://media.metro.net/projects_studies/crenshaw/images/AMC_96th_St_Station_Draft_EIR_2016-6.pdf.

62 City of Los Angeles, Los Angeles World Airports*, Draft Initial Study/Negative Declaration – Los Angeles International Airport (LAX) Terminal 6 Renovation Project,* Section VI – Energy, January 2020. Available: https://www.lawa.org/en/lawa-our-lax/environmental-documents/current-projects/terminal-6-renovation-project.

4.4 Greenhouse Gas Emissions

4.4.1 Introduction

This greenhouse gas (GHG) analysis examines GHG and global climate change (GCC) impacts that would result from construction and operational activities associated with the proposed Project. This section describes applicable Federal, State, and local regulations that address GHG emissions and GCC in California and the City of Los Angeles; existing climate conditions and influences on GCC are also described. The analysis accounts for energy and resource conservation measures that have been incorporated into the proposed Project, as well as pertinent State-mandated GHG emission reduction measures.[1] The analysis also assesses cumulative and Project-related contributions to GCC that would result from the proposed Project. Air quality effects associated with criteria pollutant (ambient air pollutant) emissions are discussed in Section 4.1, *Air Quality and Human Health Risk*, of this EIR. GHG emission calculations prepared for the proposed Project are provided in **Appendix C** of this EIR.

4.4.1.1 Predicted Global and Local Climate Change

Briefly stated, GCC is a change in the average climatic conditions of the earth, as characterized by changes in wind patterns, storms, precipitation, and temperature. The baseline by which these changes are measured originates in historical records identifying temperature changes that have occurred in the past, such as during previous ice ages. Many of the recent concerns over GCC use these data to extrapolate a level of statistical significance, specifically focusing on temperature records from the last 150 years (the Industrial Age) that differ from previous climate changes in rate and magnitude.

The United Nations Intergovernmental Panel on Climate Change (IPCC) developed several emission projections of GHGs needed to stabilize global temperatures and climate change impacts. The IPCC predicted that the global mean temperature change from 2005 to 2100, given six ambient carbon dioxide (CO_2) scenarios, could range from 1.5 to 4.8 degrees Celsius (°C). Regardless of analytical methodology, global average temperature and mean sea level are expected to rise under all scenarios.[2]

Climate models applied to California's conditions project that, under different scenarios, temperatures in California are expected to increase by 2.1 to 8.6 degrees Fahrenheit (°F). Almost all climate scenarios include a continuing trend of warming through the end of the century given the substantial amounts of GHGs already released, and the difficulties associated with reducing emissions to a level that would stabilize the climate. According to California's Fourth Climate Change Assessment, the following climate change effects are predicted in the Los Angeles region over the course of the next century.[3]

- Continued future warming will occur over the Los Angeles Region, with average maximum temperatures projected to increase around 4 to 5 °F by the mid-century and 5 to 8 °F by the late-century.
- Extreme temperatures are expected to increase. The hottest day of the year may be up to 10 °F warmer by the late century, while the number of extremely hot days is also expected to increase.

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1 See Section 4.3, *Energy,* of this EIR for discussion of energy efficiency measures.

2 Intergovernmental Panel on Climate Change, *Climate Change 2014 – Mitigation of Climate Change, Working Group III Contribution to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, 2014, page 439. Available: https://www.ipcc.ch/site/assets/uploads/2018/02/ipcc_wg3_ar5_chapter6.pdf.

3 Hall, Alex, Neil Berg, Katharine Reich, University of California, Los Angeles, *Los Angeles Summary Report, California's Fourth Climate Change Assessment*, page 6, 2018. Available: https://www.energy.ca.gov/sites/default/files/2019-11/Reg%20Report-%20SUM-CCCA4-2018-007%20LosAngeles_ADA.pdf.

- Dry and wet extremes in precipitation are both expected to increase. The wettest day of the year is expected to increase across most of the region by the end of the century. Furthermore, the frequency and severity of atmospheric river events are also projected to increase.
- Sea levels are projected to rise, but there is a lot of uncertainty in the different modeled emission scenario. Approximately 1 to 2 feet of sea level rise is projected by mid-century, with 8 to 10 feet of sea level rise by the end of the century under extreme projections.

Climate change has increased the frequency and severity of wildfires in California with the area burned by wildfires increasing each year since 1950. The August Complex Fire (started in August 2020) is the largest recorded wildfire in California history and eight of the largest 20 fires in California's history have occurred in the past three years.[4]

Temperature increases would lead to adverse environmental impacts in a wide variety of areas, including sea level rise, reduced snowpack resulting in changes to existing water resources, increased risk of wildfires, and public health hazards associated with higher peak temperatures, heat waves, and decreased air quality.

4.4.1.2 Greenhouse Gases

Parts of the Earth's atmosphere act as an insulating blanket, trapping sufficient solar energy to keep the global average temperature in a suitable range. The blanket is a collection of atmospheric gases called GHGs. These gases – primarily water vapor, CO_2, methane (CH_4), nitrous oxide (N_2O), ozone, chlorofluorocarbons (CFCs), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6) – all act as effective global insulators, reflecting back to earth visible light and infrared radiation. Human activities, dominated by producing electricity and driving vehicles, have elevated the concentrations of these gases in the atmosphere. Many scientists believe that these elevated levels, in turn, are causing the earth's temperature to rise. A warmer earth may lead to changes in rainfall patterns, much smaller polar ice caps, a rise in sea level, and a wide range of impacts on plants, wildlife, and humans.

The global warming potential (GWP) of a GHG pollutant is heat absorbed by a GHG pollutant over a particular time period, typically 100 years. Individual GHG pollutant species have varying GWP and atmospheric lifetimes.[5] The carbon dioxide equivalent (CO_2e) is calculated from the GWP and represents that amount of CO_2 that would be required to warm the earth as much as the pollutant being emitted. In other words, if a pollutant has a GWP of 25, then it would only take 1 ton of its emissions to equal 25 tons of CO_2 emissions. Compared to CH_4's GWP of 25 and N_2O's GWP of 298, CH_4 and N_2O have greater global warming effects than CO_2 on a molecule-per-molecule basis.

GHG emissions are characterized by ownership and control of emissions from the sources. As a result, they are identified by "scopes," ranging from GHGs produced directly by the business to more indirect sources of GHG emissions, such as employee travel and commuting. Direct and indirect emissions can be generally separated into three broad scopes as follows:

- Scope 1. Direct emissions by sources owned and controlled by the reporting entity
- Scope 2. Indirect GHG emissions from consumption of purchased electricity, heat, or steam (i.e., GHG emissions generated at the power plant that provides electricity at the demand of the site/facility)

[4] California Air Resources Board, *Wildfires & Climate Change*. Available: https://ww2.arb.ca.gov/wildfires-climate-change, accessed September 22, 2020.

[5] U.S. Environmental Protection Agency, *Glossary of Climate Change Terms*. Available: https://19january2017snapshot.epa.gov/climatechange/glossary-climate-change-terms_.html, accessed November 25, 2019.

- Scope 3. Other indirect (optional) GHG emissions, such as the extraction and production of purchased materials and fuels, transport-related activities in vehicles not owned or controlled by the reporting entity, electricity-related activities (e.g., transmission and distribution losses) not covered in Scope 2, outsourced activities, waste disposal, and construction

The Airports Council International (ACI), a worldwide organization addressing airport issues, has implemented the Airport Carbon Accreditation (ACA) program to standardize the evaluation of carbon emissions from airports. The ACA program enables airports to participate at Levels 1, 2, 3, and 3+, ranging from reporting Scope 1 and 2 emissions at Level 1, to reporting and managing Scope 1/2/3 emissions at Level 3, and carbon neutrality of Scope 1/2 emissions at Level 3+.[6] LAWA participates at Level 3 for LAX.[7]

4.4.2 Methodology

The assumptions used to estimate GHG emissions from construction and operational sources are the same as those discussed in Section 4.1, *Air Quality and Human Health Risk* (see Section 4.1.1.2, *Methodology,* for the air quality analysis). The discussion below provides a description of methodology elements that are specific to analyzing GHG emissions.

A number of methodologies and significance thresholds have been considered over the past several years by various agencies and jurisdictions in California to analyze the impacts of GHG emissions on GCC. However, at the time of this analysis, no definitive thresholds or methodologies that are applicable to the proposed Project have been formally adopted for determining the significance of the Project's contribution to GCC in CEQA documents.

Various guidance documents, such as The Climate Registry *General Reporting Protocol* (version 3.0, May 2019);[8] the joint California Air Resources Board (CARB), California Climate Action Registry (CCAR), and International Council for Local Environmental Initiatives (ICLEI) *Local Government Operations Protocol* (LGOP) (version 1.1, May 2010);[9] the Association of Environmental Professionals (AEP) *Community-wide GHG Emissions Protocol*;[10] and the ACI ACA program propose generally consistent methodologies for preparing GHG inventories.[11] These methodologies were developed for varying purposes, and not specifically for CEQA. Relying on these guidance documents, this analysis addresses both direct and indirect GHG emissions, as reflected in the previously defined Scope 1, 2, and 3 categories.

CARB believes that consideration of so-called indirect emissions provides a more complete picture of the GHG footprint of a facility: "As facilities consider changes that would affect their emissions – addition of a cogeneration unit to boost overall efficiency even as it increases direct emissions, for example – the relative impact on total (direct plus indirect) emissions by the facility should be monitored. Annually reported indirect energy usage also aids the conservation awareness of the facility and provides information" to CARB to be considered for future strategies by the industrial sector.[12] For these reasons,

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6 ACI EUROPE, *Airports & CO_2, 4 Levels of Certification*. Available: https://www.airportcarbonaccreditation.org/airport/4-levels-of-accreditation/introduction.html, accessed June 4, 2020.

7 ACI EUROPE, *Accredited Airports across the world, North America, Optimisation*. Available: https://www.airportcarbonaccreditation.org/airport/participants/north-america.html, accessed June 4, 2020.

8 The Climate Registry, *General Reporting Protocol, Version 3.0*, May 2019. Available: https://www.theclimateregistry.org/protocols/General-Reporting-ProtocolV3.pdf.

9 California Air Resources Board, *Local Government Operations Protocol*, *Version 1.1*. Available: https://www.theclimateregistry.org/wp-content/uploads/2014/12/2010-05-06-LGO-1.1.pdf.

10 Association of Environmental Professionals (AEP), *Forecasting Community-Wide Greenhouse Gas Emissions and Setting Reduction Targets*, Draft: May 2012. Available: https://califaep.org/docs/Forecasting_and_Target_Setting.pdf.

11 Airport Carbon Accreditation, *Greenhouse Gas Protocol*. Available: http://www.airportcarbonaccredited.org/airport/4-levels-of-accreditation/ghg-protocol.html, accessed December 3, 2019.

12 California Air Resources Board, Planning and Technical Support Division Emission Inventory Branch, *Staff Report: Initial Statement of Reasons for Rulemaking, Proposed Regulation for Mandatory Reporting of Greenhouse Gas Emissions Pursuant to the California Global Warming Solutions Act of 2006 (Assembly Bill 32)*, October 19, 2007. Available: https://ww3.arb.ca.gov/regact/2007/ghg2007/isor.pdf.

CARB requires the calculation of direct and indirect GHG emissions as part of Assembly Bill (AB) 32 reporting requirements. Additionally, the Governor's Office of Planning and Research (OPR) guidance for lead agencies conducting GCC analyses in CEQA documents indicates that lead agencies should "make a good-faith effort, based on available information, to calculate, model, or estimate … GHG emissions from a project, including the emissions associated with vehicular traffic, energy consumption, water usage and construction activities."[13] Therefore, direct and indirect emissions (i.e., Scope 1, 2, and 3) have been calculated for the proposed Project. Because potential impacts from GHG emissions are long-term, GHG emissions are calculated on an annual basis.

The analysis considers only those GHG emissions resulting from the proposed Project that would lead to a net change (increase or decrease) in incremental emissions compared to baseline conditions in 2018.

4.4.2.1 Construction

GHG emissions associated with construction of the proposed Project were calculated based on methodologies provided in The Climate Registry *General Reporting Protocol* (GRP) Version 3.0.[14] The GRP is the guidance document that LAWA and other members of The Climate Registry must use to prepare annual GHG inventories for the Registry. Therefore, for consistency, the GRP also was used in this impact analysis. However, to adapt the GRP for CEQA purposes, the following refinement to the GRP operational and geographical boundaries was necessary. The GRP requires all direct and indirect emissions owned or controlled by the reporting entity to be reported; under CEQA, only emission sources that would materially change as part of the proposed Project in a manner and to an extent that may result in a significant impact on the environment are required to be analyzed. Certain elements of indirect emissions associated with construction activities, such as related to purchased electricity, solid waste disposal, water usage, and wastewater disposal, would be speculative and negligible compared to the direct emissions of the construction process. Analysis of these indirect construction emissions would not alter the significance conclusions reached in this analysis and would not substantially increase the severity of a significant impact. Therefore, these emissions, which would normally be included in an inventory prepared pursuant to the GRP for purposes of The Climate Registry, were not included in this analysis.

In accordance with guidance from the South Coast Air Quality Management District (SCAQMD), GHG emissions from construction were amortized over the 30-year lifetime of the proposed Project (i.e., total construction GHG emissions were divided by 30) and then added to annual operational emissions estimated to occur with Project implementation.[15]

The proposed Project construction-related sources for which GHG emissions were calculated include:

- Off-road construction equipment
- On-road equipment and delivery/haul trucks
- Construction worker trips
- Incremental operational worker trips during construction
- Increased aircraft ground power unit (GPU) usage during construction

These construction sources are considered to be a Scope 3 source.

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[13] State of California, Office of Planning and Research, Technical Advisory, *CEQA and Climate Change: Addressing Climate Change Through California Environmental Quality Act (CEQA) Review*, June 19, 2008, p. 5. Available: https://opr.ca.gov/docs/june08-ceqa.pdf. A draft update to this guidance was released in December 2018 with similar advice. Available: http://opr.ca.gov/docs/20181228-Discussion_Draft_Climate_Change_Advisory.pdf.

[14] The Climate Registry, *General Reporting Protocol, Version 3.0*, May 2019. Available: https://www.theclimateregistry.org/protocols/General-Reporting-ProtocolV3.pdf.

[15] South Coast Air Quality Management District, *Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance Threshold*, October 2008, p. 3-9. Available: http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/ghgattachmente.pdf?sfvrsn=2.

Existing maintenance facilities and the Central Utility Plant (CUP) are not proposed to be substantially changed by the LAX Airfield and Terminal Modernization Project and, thus, construction emissions associated with these facilities were not evaluated in this analysis. A description of the off-road construction equipment, on-road construction equipment, delivery/haul truck trips, and construction worker trips associated with construction of the proposed Project is provided in Section 4.1, *Air Quality and Human Health Risk*, Section 4.1.1.2. The parameters used to develop construction GHG emissions for these sources, including construction schedule, equipment usage, and load factors, are the same as those outlined for the construction criteria air pollutant emissions analysis, and are presented in Section 4.1.1.3, with supporting information presented in **Appendix C.1** of this EIR.

4.4.2.2 Operations

In accordance with the State CEQA Guidelines, the operational GHG impacts of the proposed Project were assessed based on the net new incremental increase in emissions to determine significance under CEQA. The aircraft activity levels for existing conditions were based on actual operations in 2018. The aircraft activity levels for future conditions were based on aircraft activity growth forecasts for LAX in 2028.[16] Aircraft activity levels were also developed during the anticipated runway closures in 2023 and 2024 as part of the construction impact analysis. Additionally, changes in the airfield configuration would alter taxiing times associated with aircraft movements. Sources of operational emissions evaluated in the analysis include aircraft engines and auxiliary power units (APUs); ground support equipment (GSE); ground vehicles used to transport passengers, cargo, and supplies to and from the airport; stationary water and space heaters; emergency generators; and indirect GHG emissions from electrical demand. Most of these are Scope 3 sources. LAWA ground vehicle trips for airport purposes (i.e., not LAWA employee commute trips) are Scope 1 sources, as are stationary sources (such as boilers used for heating and cooling) used directly by LAWA for the proposed Project.

The parameters used to develop operational GHG emissions for these sources are the same as those outlined for the criteria air pollutant emissions analysis presented in Section 4.1.1.2. As described in that section, emissions from aircraft, which include emissions of GHG pollutants, were estimated using FAA's Aviation Environmental Design Tool Version 3b (AEDT 3b).[17] AEDT calculates the GHG pollutant emissions for aircraft based on the landing-takeoff (LTO) cycle. For vehicular traffic, GHG pollutant emissions from the entire trip length, from the trip origin to LAX, were considered in the analysis. Additionally, information on electrical demand is the same as that developed for the analysis in Section 4.3, *Energy*.

4.4.2.3 Existing LAWA Policies and Proposed Project Features

LAWA has developed a number of policies that address environmental issues, including GHG emissions, associated with airport project construction and airport operations. Existing policies that may reduce GHG emissions are briefly described in Section 4.4.3.1.5 below, under the heading "LAWA Sustainability Plans and Guidelines." In addition to complying with these policies, LAWA would incorporate a number of proposed Project design features which also address or reduce environmental impacts. A general description of these features is provided in Section 2.4.5, *Sustainability*. The detailed GHG emissions calculations for the existing conditions, future With Project and future Without Project scenarios incorporate those policies and Project features that would be in effect under each scenario. The policies and Project features that were included in the calculations were those with specific targets or other

[16] As detailed in Chapter 2, *Description of the Proposed Project*, Section 2.3.1.2, future growth in aviation activity at LAX is not dependent on, or driven by, the improvements associated with the proposed Project and, therefore, the aircraft activity would not differ between the With Project and Without Project future scenarios.

[17] It should be noted that, unlike cars, where changes in emissions are recognized in the fuel economy standards applied to future vehicle trips, AEDT does not assume any future emissions reductions due to increased fuel economy or aircraft design improvements. Therefore, future aircraft-related GHG emissions may be overstated.

information that could be used to quantify GHG emission reductions. The existing policies and Project features that have been incorporated into the unmitigated GHG emission calculations include:

- Construction Emissions (these only apply to the proposed Project construction since the other analyzed scenarios – existing conditions and Without Project – do not include construction activity)
  - Use of off-road construction equipment that complies with USEPA Tier 4 Final engine emission standards (Existing Policy – Design and Construction Handbook [DCH][18])
  - Use of on-road construction trucks that comply with USEPA 2010 model year emission standards (Existing Policy – DCH)
  - On-road construction truck idling time limited to five minutes per one-way trip (Existing Policy – DCH)
  - Use of an on-airport concrete batch plant for proposed Project concrete demand, reducing concrete haul truck miles traveled and associated emissions, and including emission controls on batch plant operations as required in LAWA's existing permit (Existing Policy – Permitted Batch Plants)
- Operational Emissions
  - Airfield layout designed to minimize aircraft taxi and delay times (Project Feature, only applied to With Project scenario)
  - Use of hydrant fueling system – As with the existing airport, which uses an extensive hydrant fueling system, hydrant fueling would be included in the new terminal and concourse aircraft parking positions, which would eliminate the need for large aircraft fueling trucks (Existing Policy and Project Feature, applied to all scenarios)
  - Reductions associated with LAWA's existing GSE Policy, applied to GSE emissions for all scenarios (Existing Policy)
  - Reduced aircraft APU operating times for gates and other aircraft parking positions with pre-conditioned air and gate power, applied to APU emissions for all scenarios (Existing Policy - DCH)
  - Create Connection between LAX and Public Transit (Existing Policy and Project Feature). LAWA is currently constructing the LAX Landside Access Modernization Program that includes an Automated People Mover station adjacent to the future Airport Metro Connector (AMC), which will help support and encourage transit ridership at LAX. The Without Project scenario includes APM stations at the ITF West and in the CTA that are part of the LAX Landside Access Modernization Program. The With Project scenario adds an additional APM station at Terminal 9 that would also help support use of transit by employees and passengers.

Many other LAWA policies and Project features would potentially produce emission reductions, but sufficient information to determine the reduction quantities is not available or verifiable. Those existing policies and Project features that would apply to the Project but whose effects were not quantified are listed below, along with the rationale for not including the measures in the unmitigated GHG emission calculations:

[18] City of Los Angeles, Los Angeles World Airports, *2020 Design and Construction Handbook (DCH), Version 1.0,* June 30, 2020. Available: https://www.lawa.org/en/lawa-businesses/lawa-documents-and-guidelines/lawa-design-and-construction-handbook.

- Construction Policies and Project Features
  - Utilize electric grid power for construction equipment instead of using temporary diesel or gasoline generators (Existing Policy - DCH). Availability and accessibility of grid power may not be known until detailed design.
- Operational Policies and Project Features
  - LAWA Alternative Fuel Vehicle Policy and associated incentive program (Existing Policy). The vehicles subject to this policy represent a small portion of the total airport-related traffic volumes studied in this EIR. Determining whether the policy will change the overall fleet mix of motor vehicles coming to LAX was not verifiable.
  - LAWA-Operated Light-Duty Auto and Airfield Bus programs (Existing Policy – AQIM[19]). LAWA purchased 20 electric buses and over 60 electric light duty autos for airport operations. These vehicles represent a very small portion of the total airport-related traffic volumes studied in the EIR. Determining whether the program will change the overall fleet mix of motor vehicles at LAX is not verifiable.
  - Installation of Electric Vehicle (EV) Chargers for Passengers and Employees in compliance with City code (Existing Policy – DCH, and Project Feature). Over 100 EV charges have been installed at LAX, and the proposed Project would include installation of more changes in the Terminal 9 parking structure in compliance with City code. Installation of EV chargers would not directly reduce emissions but would encourage use of electric vehicles for travel to and from the airport.
  - Achieve Leadership in Energy and Environmental Design (LEED®) Silver requirements for Concourse 0 and Terminal 9 (Existing Policy – DCH, Project Feature). LAWA would require the design and construction of Concourse 0 and Terminal 9 achieve LEED® Silver requirements, at a minimum, in accordance with LAWA's adopted the *Sustainable Design and Construction Policy*.[20] Since multiple options can be implemented to meet those requirements, specific quantification of emission reductions was not attempted.
  - LAWA Employee Rideshare Program (Existing Policy). LAWA provides incentives to its employees to use alternative means to travel to the airport for work. The reduced vehicles represent a small portion of the total airport-related traffic volumes studied in the EIR. Determining whether the program changes the overall volume of motor vehicles at LAX may not be verifiable.

4.4.3 Existing Conditions

4.4.3.1 Regulatory Setting

4.4.3.1.1 International

International Governmental Panel on Climate Change

In 1988, the United Nations and the World Meteorological Organization established the International Governmental Panel on Climate Change (IPCC) to provide policymakers with regular scientific assessments on the current state of knowledge about climate change and "to provide governments…with scientific

[19] As discussed in Section 4.1.1.3.1, LAWA developed LAX Air Quality Improvement Measures (AQIM) to further reduce air pollutant emissions from non-aircraft sources operating at LAX during negotiations with SCAQMD on the voluntary Memorandum of Understanding (MOU); the MOU was formally completed with SCAQMD in December 2019, and identifies specific targets and incentives to further reduce air pollutant emissions from non-aircraft sources operating at LAX.

[20] City of Los Angeles, Los Angeles World Airports, *LAWA Sustainable Design and Construction Policy*, September 7, 2017. Available: https://www.lawa.org/-/media/lawa-web/tenants411/file/lawa-sustainable-design-and-construction-policy.ashx.

information that they can use to develop climate policies." The IPCC "provides regular assessments of the scientific basis of climate change, its impacts and future risks, and options for adaptation and mitigation."[21] Since its inception, the IPCC has delivered five comprehensive scientific reports about climate change, with the latest (the Fifth Assessment Report) released in four parts between September 2013 and November 2014.[22]

United Nations Framework Convention on Climate Change

The United Nations Framework Convention on Climate Change (UNFCCC) is an International Environmental Treaty that entered into force on March 21, 1994. It has been ratified by 197 countries, including the United States. Under the Convention, governments gather and share information on GHG emissions, national policies, and best practices; launch national strategies for addressing GHG emissions and adapting to expected impacts, including the provision of financial and technological support to developing countries; and cooperate in preparing for adaptation to the impacts of climate change.[23]

Kyoto Protocol

The Kyoto Protocol, which was adopted on December 11, 1997 and entered into force on February 16, 2005, extends the commitments made under the UNFCCC. More than 160 countries, accounting for 55 percent of global emissions, have signed the protocol, under which they commit to reduce their emissions of GHGs or engage in emissions trading. The U.S. symbolically signed the Kyoto Protocol in 1998, however, the U.S. Senate has not ratified the protocol. The original GHG reduction commitments made under the Kyoto Protocol expired at the end of 2012. An extension of the commitment period to December 31, 2020, was agreed to at the Doha, Qatar, meeting held December 8, 2012.[24]

Paris Agreement

Negotiations held to discuss measures to be taken after the end of the Kyoto Protocol commitment period resulted in the 2015 adoption of the Paris Agreement.[25] The U.S. formally entered the Paris Agreement in September 2016 through an executive order, however, the agreement was not submitted to Congress for approval. In June 2017, the U.S. announced its intent to withdraw from the agreement. The earliest effective date of a withdrawal by the U.S. is November 2020.

Carbon Offsetting and Reduction Scheme for International Aviation

The Carbon Offsetting and Reduction Scheme for International Aviation, or CORSIA, is a CO_2 emission mitigation approach for the global airline industry developed by the International Civil Aviation Organization (ICAO) to address CO_2 emissions from international air travel. ICAO is a United Nations specialized agency, established in 1944, to manage the administration and governance of the Convention on International Civil Aviation. ICAO works with 193 member countries and states throughout the world, as well as industry groups, to reach consensus on international civil aviation Standards and Recommended Practices (SARPs) and policies in support of a safe, efficient, secure, economically sustainable, and environmentally responsible civil aviation sector. These SARPs and policies are used by ICAO members to

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21 Intergovernmental Panel on Climate Change, *About the IPCC*. Available: https://www.ipcc.ch/about/, accessed August 19, 2020.

22 Intergovernmental Panel on Climate Change, *History of the IPCC*. Available: https://www.ipcc.ch/about/history/, accessed June 30, 2020.

23 United Nations, *United Nations Framework Convention on Climate Change,* 1992. Available: https://unfccc.int/resource/docs/convkp/conveng.pdf.

24 United Nations, *Kyoto Protocol to the United Nations Framework Convention on Climate Change*, 1998. Available: https://unfccc.int/resource/docs/convkp/kpeng.pdf.

25 United Nations, *Paris Agreement*, 2015. Available: http://unfccc.int/files/essential_background/convention/application/pdf/english_paris_agreement.pdf; United Nations, *Framework Convention on Climate Change - Adoption of the Paris Agreement*, December 12, 2015. Available: https://unfccc.int/resource/docs/2015/cop21/eng/l09r01.pdf.

ensure that their local civil aviation operations and regulations conform to global norms which, in turn, permits more than 100,000 daily flights in aviation's global network to operate safely and reliably in every region of the world.[26]

In 2010, ICAO adopted several aspirational targets to minimize CO_2 emissions from aircraft: a global target of improving aviation fuel efficiency by two percent annually through 2050; carbon neutral growth from 2020; and reducing CO_2 emissions by 50 percent by 2050 compared to 2005 emissions (Resolution A37-19). ICAO created a "basket of measures" to achieve these goals: 1) aircraft technology and standards; 2) operational improvements; 3) sustainable alternative fuels; and 4) global market-based mechanisms. ICAO recognized that aircraft technology and standards and operational improvements are not enough to achieve its carbon neutral goal and that alternative fuels require more development. ICAO subsequently adopted CORSIA in 2016 to provide a market-based mechanism to fill the emissions gap that would occur between implementation of the other measures and 2020 baseline emission levels (Resolution A39-3).[27]

CORSIA was designed to have phased implementation with a voluntary pilot phase between 2021 and 2023, a voluntary first phase between 2024 and 2026, and a mandatory second phase between 2027 and 2035. The U.S. elected to voluntarily enter CORSIA during the pilot phase commencing in 2021.

CORSIA is a route-based approach, meaning that only emissions from international flights between two member states where both the origin and destination states are included in CORSIA are included in the scheme. Starting in 2019, all aircraft operators (namely airlines), regardless of the country in which they are based, were required to monitor their fuel consumption on routes covered by CORSIA and to estimate their annual CO_2 emissions. ICAO will calculate the average annual emissions between 2019 and 2020 to establish a baseline from which increased CO_2 emissions in subsequent years will be determined. ICAO will use the collected inventory data in future years to estimate a sectoral growth factor of emissions that will then be used by aircraft operators to calculate their CO_2 offsetting requirements. Each operator will then purchase emission credits from the carbon market to meet its offset requirements.

In 2018, ICAO adopted SARPs to implement CORSIA in the form of Annex 16, Volume IV to the Convention on International Civil Aviation.[28] On March 14, 2019, the Federal Aviation Administration (FAA) published its CORSIA Monitoring, Reporting, and Verification (MRV) Program,[29] which provides information to U.S. airplane operators on how to fulfill their obligations under CORSIA and establishes uniformity with the SARPs adopted by ICAO. Only operators that emit more than 10,000 metric tons of CO_2 per year from international flights are subject to CORSIA with the following exemptions: 1) domestic flights; 2) humanitarian, medical, and firefighting operations; 3) operations using an airplane with a maximum certified takeoff mass equal to or less than 5,700 kilograms; and 4) operations on the behalf of the U.S. military.

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[26] International Civil Aviation Organization, *About ICAO*. Available: https://www.icao.int/about-icao/Pages/default.aspx, accessed June 30,2020.

[27] International Civil Aviation Organization, *Resolution A39-3: Consolidated statement of continuing ICAO policies and practices related to environmental protection – Global Market-based Measure (MBM) scheme*. Available: https://www.icao.int/environmental-protection/Documents/Resolution_A39_3.pdf.

[28] International Civil Aviation Organization, *Annex 16 to the Convention on International Civil Aviation – Environmental Protection – Volume IV, Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA)*, 2018. Available: https://www.icao.int/environmental-protection/CORSIA/Pages/SARPs-Annex-16-Volume-IV.aspx.

[29] U.S. Department of Transportation, Federal Aviation Administration, *Notice of CORSIA Monitoring, Reporting, and Verification Program*, 84 Fed. Reg. 9412 (Mar. 14, 2019). Available: https://www.federalregister.gov/documents/2019/03/14/2019-04739/faas-corsia-monitoring-reporting-and-verification-program.

4.4.3.1.2 Federal

USEPA Endangerment Findings

In 2010, the U.S. Environmental Protection Agency (USEPA) adopted an endangerment finding for GHGs under Clean Air Act (CAA) Section 202(a) under which the Administrator determined that (1) six GHGs, taken in combination, endanger both the public health and welfare of current and future generations (although the finding acknowledges that transportation sources only emit four of the key GHGs: CO_2, CH_4, N_2O, and HFCs), and (2) the combined emissions of GHGs from new motor vehicles contribute to this GHG air pollution.[30] The Endangerment Finding itself is not a regulation, but it establishes a legal obligation for USEPA to regulate GHGs.

On August 15, 2016, USEPA took the first steps toward addressing GHG emissions from aircraft engines by publishing its finding that GHGs emitted from certain classes of engines used in certain aircraft contribute to the air pollution that endangers public health and welfare.[31] USEPA has not proposed rules for aircraft engine GHG emissions standards.

GHG and Fuel Efficiency Standards for Passenger Cars and Light Duty Trucks

In April 2010, the USEPA and National Highway Traffic Safety Administration (NHTSA) finalized GHG standards for new (model year 2012 through 2016) passenger cars, light-duty trucks, and medium-duty passenger vehicles that would decrease CO_2 emission limits for a combined fleet of cars and light trucks. If fuel economy improvements caused all necessary emission reductions, the standards would correspond to a combined fuel economy of 30.1 miles per gallon (mpg) in 2012 and 35.5 mpg in 2016.[32] The agencies also issued a joint Final Rule for a coordinated National Program for model years 2017 to 2025 light-duty vehicles on August 28, 2012, that would correspond to a combined fuel economy of 36.6 mpg in 2017 and 54.5 mpg in 2025.

As part of the 2012 rulemaking establishing the model year 2017-2025 light-duty vehicle GHG standards, the USEPA made a regulatory commitment to conduct a Mid-term Evaluation of the standards for model years 2022-2025. As part of this process, the USEPA was to examine a wide range of factors, such as developments in powertrain technology, vehicle electrification, light-weighting and vehicle safety impacts, the penetration of fuel-efficient technologies in the marketplace, consumer acceptance of fuel-efficient technologies, trends in fuel prices and the vehicle fleet, employment impacts, and many others. In April 2018, the USEPA Administrator signed the Mid-term Evaluation Final Determination, which found that the model year 2022-2025 GHG standards are not appropriate in light of the record before the USEPA and, therefore, should be revised.[33]

Subsequently, in August 2018, USEPA and the National Highway Traffic Safety Administration (NHTSA) proposed ‘‘Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021–2026 Passenger Cars and Light Trucks’’ (SAFE Vehicles Rule). The SAFE Vehicles Rule would amend certain existing Corporate Average Fuel Economy (CAFE) and tailpipe CO_2 emissions standards for passenger cars and light trucks and establish new standards, all covering model years 2021 through 2026. In addition, USEPA proposed

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30 U.S. Environmental Protection Agency, *Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act, Final Rule*, Federal Register, Vol. 74, No. 239, December 15, 2009, pp. 66496 - 66546. Available: https://www.govinfo.gov/content/pkg/FR-2009-12-15/pdf/E9-29537.pdf#page=2.

31 U.S. Environmental Protection Agency, *Finding that Greenhouse Emissions from Aircraft Cause or Contribute to Air Pollution That May Reasonably Be Anticipated To Endanger Public Health and Welfare; Final Rule,* Federal Register, Vol. 81, No. 157, pp. 54,422-54,475, August 15, 2016. Available: https://www.govinfo.gov/content/pkg/FR-2016-08-15/pdf/2016-18399.pdf.

32 U.S. Environmental Protection Agency, *Regulatory Announcement: EPA and NHTSA Finalize Historic National Program to Reduce Greenhouse Gases and Improve Fuel Economy for Cars and Trucks*, April 2010. Available: https://nepis.epa.gov/Exe/ZyPDF.cgi/P100AKHW.PDF?Dockey=P100AKHW.PDF.

33 U.S. Environmental Protection Agency. *Midterm Evaluation of Light-Duty Vehicle Greenhouse Gas Emissions Standards for Model Years 2022-2025 – Overview*. Available: https://www.epa.gov/regulations-emissions-vehicles-and-engines/midterm-evaluation-light-duty-vehicle-greenhouse-gas#overview; Federal Register, Vol. 83, No. 72. April 13, 2018.

to withdraw the waiver it had previously provided to California for that state's GHG and Zero Emission Vehicle (ZEV) programs under Section 209 of the Clean Air Act, and NHTSA proposed regulatory text implementing its statutory authority to set nationally applicable fuel economy standards that made explicit that those State programs would also be preempted under NHTSA's authorities.[34] In September 2019, USEPA and NHTSA finalized approval of the withdrawal of the waiver granted to California by USEPA, and NHTSA finalized regulatory text related to the federal preemption ("Part One" of the SAFE vehicle rule).[35] California and a coalition of other states has sued both the USEPA and the NHTSA, challenging their decisions that would block the state from setting tougher automobile emissions standards.[36,37,38]

"Part Two" SAFE standards for model year 2021-2026 passenger cars and light trucks were finalized in April 2020 and set fuel economy and CO_2 standards that increase 1.5 percent in stringency for each model year.[39,40] Under the final rule, the CAFE and CO_2 emissions standards increase in stringency by only 1.5 percent per year for each model year over model year 2020 levels.[41] These standards are less stringent than the previous standards, which would have increased fuel efficiency standards by 4 percent per year. On May 27, 2020, a multistate coalition, led by California, filed a lawsuit against the USEPA and the NHTSA challenging this ruling.[42] In its lawsuit, the coalition argues that the rollback of the nation's emissions standards is unlawful as the rollbacks "violate the statutory text and congressional mandates they are bound by" and relied on erroneous analysis and unfounded assumptions, among other things.[43] CARB has estimated the potential impact of the Part One rule on the criteria pollutant emission factors generated by EMFAC2014 and EMFAC2017 light duty gasoline automobiles and light duty gasoline trucks (i.e., the vehicles affected by the SAFE Vehicles Rule).[44] In June 2020, CARB determined that the adjustment factors published for the Part One rule continue to be valid for the Final SAFE Rule, but additional adjustment factors were required for CO_2 emissions.[45] The adjustment factors for EMFAC2017 have been applied to the project-related on-road motor vehicle emissions estimated for construction and operations.

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34 U.S. Environmental Protection Agency and National Highway Traffic Safety Administration, *Notice of Proposed Rule Making - The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021–2026 Passenger Cars and Light Trucks*, 83 FR 42986, August 24, 2018.

35 U.S. Environmental Protection Agency and National Highway Traffic Safety Administration, *Withdrawal of Waiver, Final Rule - The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule Part One: One National Program*, 84 FR 52310, September 27, 2019.

36 *California v. Wheeler*, No. 19-1239 (D.C. Cir. Pet'n filed Nov. 15, 2019).

37 State of California, Department of Justice, *Press Release: Attorney General Becerra Files Lawsuit Challenging Trump Administration's Attempt to Trample California's Authority to Maintain Longstanding Clean Car Standards*, September 20, 2019. Available: https://oag.ca.gov/news/press-releases/attorney-general-becerra-files-lawsuit-challenging-trump-administration%E2%80%99s, accessed December 9, 2019.

38 State of California, Department of Justice, *Press Release: Attorney General Becerra Files Lawsuit Against EPA for Attacking California's Advanced Clean Car Standards*, November 15, 2019. Available: https://oag.ca.gov/news/press-releases/attorney-general-becerra-files-lawsuit-against-epa-attacking-california%E2%80%99s, accessed December 9, 2019.

39 U.S. Environmental Protection Agency and National Highway Traffic Safety Administration, *Final Rule, The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks*, 85 FR 24 174, April 30, 2020. Available: https://www.govinfo.gov/content/pkg/FR-2020-04-30/pdf/2020-06967.pdf.

40 National Highway Traffic Safety Administration, *NHTSA and EPA finalize CAFE and carbon dioxide emissions standards for model years 2021-2026*, March 31, 2020. Available: https://www.nhtsa.gov/corporate-average-fuel-economy/safe, accessed June 4, 2020.

41 National Highway Traffic Safety Administration, *NHTSA and EPA finalize CAFE and carbon dioxide emissions standards for model years 2021-2026*, March 31, 2020. Available: https://www.nhtsa.gov/corporate-average-fuel-economy/safe, accessed June 4, 2020.

42 *California v. Wheeler*, No. 20-1167 (D.C. Cir. Pet'n filed May 27, 2020).

43 State of California, Department of Justice, *Attorney General Becerra Files Lawsuit Challenging Trump Administration's Reckless Rollback of America's Clean Car Standards*, May 27, 2020. Available at: https://oag.ca.gov/news/press-releases/attorney-general-becerra-files-lawsuit-challenging-trump-administration%E2%80%99s-2.

44 California Air Resources Board, *EMFAC Off-Model Adjustment Factors to Account for the SAFE Vehicle Rule Part One*, November 20, 2019. Available: https://ww3.arb.ca.gov/msei/emfac_off_model_adjustment_factors_final_draft.pdf.

45 California Air Resources Board, *EMFAC Off-Model Adjustment Factors for Carbon Dioxide (CO_2) Emissions to Account for the SAFE Vehicles Rule Part One and the Final SAFE Rule*, June 26, 2020. Available: https://ww3.arb.ca.gov/msei/emfac_off_model_co2_adjustment_factors_06262020-final.pdf.

GHG and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles

In October 2010, the USEPA and NHTSA announced a program to reduce GHG emissions and to improve fuel efficiency for medium- and heavy-duty-vehicles (model years 2014 through 2018). These standards were adopted on August 9, 2011.[46] In October 2016, USEPA and NHTSA adopted Phase 2 GHG and fuel efficiency standards for medium- and heavy-duty engines and vehicles. The standards are expected to lower CO_2 emissions by approximately 1.1 billion metric tons and reduce oil consumption by up to two billion barrels over the lifetime of the vehicles sold under the program.[47]

In June 2020, CARB adopted and Advanced Clean Trucks rule, a regulation approving the world's first zero-emission commercial truck requirement.[48] Under this regulation, beginning in 2024, manufacturers of Class 2b-8 chassis or complete trucks with combustion engines would be required to sell zero-emission trucks as an increasing percentage of their annual California sales from 2024 to 2035. By 2035, zero-emission truck/chassis sales would need to be 55 percent of Class 2b – 3 truck sales, 75 percent of Class 4 – 8 straight truck sales, and 40 percent of truck tractor sales.

Fuel Efficiency Standards for Construction Equipment

The federal government sets fuel efficiency standards for nonroad diesel engines that are used in construction equipment. The regulations, contained in 40 CFR Parts 1039, 1065, and 1068, include multiple tiers of emission standards. Most recently, USEPA adopted a comprehensive national program to reduce emissions from nonroad diesel engines by integrating engine and fuel controls as a system to gain the greatest emission reductions. To meet these Tier 4 emission standards, engine manufacturers will produce new engines with advanced emission control technologies.[49]

Aviation Greenhouse Emissions Reduction Plan

In 2012, the United States Government (USG) completed the U.S. Aviation Greenhouse Gas Emissions Reduction Plan, which was submitted to ICAO in June 2012.[50] In conjunction with the plan, the USG set an overarching goal of achieving carbon-neutral growth for U.S. commercial aviation by 2020, using 2005 emissions as a baseline, which equates to a reduction in CO_2 emissions from commercial aviation of approximately 115 million metric tons (MT) by 2020; extending these approaches further could result in an additional 60 million MT reduction by 2026. As part of the Next Generation Air Transportation System (NextGen) Plan, the USG has laid out plans and initiatives for improvements in technology and operations, advances in development and deployment of sustainable alternative fuels, and policies and selective measures to incentivize transition of the fleet and airspace system.

The Reduction Plan identifies actions and progress toward GHG emission reduction in each of the following areas: aircraft and engine technology improvement; operational improvements; alternative fuels development and deployment; policies, standards, and measures; and scientific understanding and modeling/analysis.

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46 U.S. Environmental Protection Agency, *Regulatory Announcement: EPA and NHTSA Adopt First-Ever Program to Reduce Greenhouse Gas Emissions and Improve Fuel Efficiency of Medium- and Heavy-Duty Vehicles*, August 2011. Available: https://nepis.epa.gov/Exe/ZyPDF.cgi/P100BOT1.PDF?Dockey=P100BOT1.PDF.

47 U.S. Environmental Protection Agency, *Final Rule for Greenhouse Gas Emissions and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles - Phase 2,* last updated August 7, 2018. Available: https://www.epa.gov/regulations-emissions-vehicles-and-engines/final-rule-greenhouse-gas-emissions-and-fuel-efficiency, accessed December 3, 2019.

48 California Air Resources Board, *Notice of Decision: Advanced Clean Truck Regulation (SCH# 2018052041)*, July 1, 2020. Available: https://ww3.arb.ca.gov/regact/2019/act2019/nod.pdf.

49 U.S. Environmental Protection Agency, *Regulations for Emissions from Vehicles and Engines-Regulations for Emissions from Heavy Equipment with Compression-Ignition (Diesel) Engines*, last updated May 10, 2018. Available: https://www.epa.gov/regulations-emissions-vehicles-and-engines/regulations-emissions-heavy-equipment-compression, accessed December 3, 2019.

50 United States Government, *United States Aviation Greenhouse Gas Emissions Reduction Plan*, 2012. Available: https://www.faa.gov/about/office_org/headquarters_offices/apl/environ_policy_guidance/policy/media/Aviation_Greenhouse_Gas_Emissions_Reduction_Plan.pdf.

In 2015, an updated Aviation Greenhouse Gas Emissions Reduction Plan was issued with additional details on actions to be taken regarding each of the topics noted above, which will occur under the auspices of NextGen.[51]

FAA Programs and Efforts to Reduce GHG Emissions

The FAA encourages and supports airports' efforts to reduce carbon emissions including, as a first step, that airports prepare a GHG inventory that categorizes emissions in terms of Scope 1, Scope 2, and Scope 3 emissions, and then follow up by implementing measures for reducing the GHG emissions that are within the airport's direct control and establishing measures that indirectly influence the reduction of GHG emissions not controlled by the airport.[52] The FAA provides Airport Improvement Program (AIP) grants to certain airports for Sustainability Master Plans or Airport Sustainability Plans to develop comprehensive sustainability planning documents.[53] The FAA also offers grant funding for GHG emission reductions through the Voluntary Airport Low Emissions (VALE) program[54] and the Airport Zero Emissions Vehicle and Infrastructure Pilot Program.[55] A representative from the FAA is on the ACA advisory panel.

USEPA GHG Emissions Standards for Aircraft

In July 2020, the USEPA proposed emission standards for airplanes used in commercial aviation and large business jets.[56] The action would match the international CO_2 standard adopted by the ICAO in 2017. The proposed standards would apply to new type design airplanes on or after January 1, 2020 and to in-production airplanes on or after January 1, 2028 but would not apply to planes already in use. The proposed CO_2 emission metric measures fuel burn at the cruise altitude and would not change the LTO calculations in this EIR.[57]

4.4.3.1.3 State

The legal framework for GHG emission reduction in California has come about through Executive Orders, legislation, and regulation. The major components of California's climate change initiatives are reviewed below.

California Environmental Quality Act

CEQA requires lead agencies to consider the reasonably foreseeable adverse environmental effects of projects they are considering for approval. GHG emissions have the potential to adversely affect the environment because they contribute to GCC. In turn, GCC has the potential to raise sea levels, affect rainfall and snowfall, and affect habitat.

Senate Bill (SB) 97, enacted in August 2007, required OPR to prepare guidelines to submit to the CNRA regarding feasible mitigation of GHG emissions or the effects of GHG emissions as required by CEQA.[58] The CNRA adopted amendments to the State CEQA Guidelines addressing GHG emissions on

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51 United States Government, *United States Aviation Greenhouse Gas Emissions Reduction Plan*, 2015. Available: https://www.faa.gov/about/office_org/headquarters_offices/apl/environ_policy_guidance/policy/media/2015_US_Action_Plan_FINAL.pdf.

52 U.S. Department of Transportation, Federal Aviation Administration, *Airport Carbon Emissions Reduction*, 2019. Available: https://www.faa.gov/airports/environmental/air_quality/carbon_emissions_reduction/, accessed December 2, 2019

53 U.S. Department of Transportation, Federal Aviation Administration, *Airport Sustainability*, 2019. Available: https://www.faa.gov/airports/environmental/sustainability/, accessed December 2, 2019.

54 U.S. Department of Transportation, Federal Aviation Administration, *Voluntary Airport Low Emissions Program (VALE)*, 2019. Available: https://www.faa.gov/airports/environmental/vale/, accessed December 2, 2019.

55 U.S. Department of Transportation, Federal Aviation Administration, *Airport Zero Emissions Vehicle and Infrastructure Pilot Program*, 2019. Available: https://www.faa.gov/airports/environmental/zero_emissions_vehicles/, accessed December 2, 2019.

56 U.S. Environmental Protection Agency, *EPA Proposes First Greenhouse Gas Emissions Standards for Aircraft*, July 22, 2020. Available: https://www.epa.gov/newsreleases/epa-proposes-first-greenhouse-gas-emissions-standards-aircraft, accessed August 5, 2020.

57 40 Code of Federal Regulations, Parts 87 and 1030, *Control of Air Pollution from Airplanes and Airplane Engines: GHG Emission Standards and Test Procedures*.

58 California Senate Bill 97, Chapter 185, Statutes of 2007.

December 30, 2009. The amendments became effective on March 18, 2010. The guidelines, including subsequent revisions in 2018, are reflected in this EIR.

The significance of GHG emissions is specifically addressed in State CEQA Guidelines Section 15064.4. Section 15064.4 calls for a lead agency to make a "good-faith effort" to "describe, calculate or estimate" GHG emissions in CEQA environmental documents. Section 15064.4 further states that the analysis of GHG impacts should include consideration of: (1) the extent to which the project may increase or reduce GHG emissions, as compared to the existing environmental setting; (2) whether the project emissions would exceed a locally applicable threshold of significance; and (3) the extent to which the project would comply with "regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions." Other sections of the Guidelines more generally state that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project will comply with the requirements in a previously approved plan or mitigation program (including plans or regulations for the reduction of GHG emissions) that provides specific requirements that will avoid or substantially lessen the cumulative problem within the geographic area in which the project is located (State CEQA Guidelines Section 15064(h)(3)). The State CEQA Guidelines do not, however, set a numerical threshold of significance for GHG emissions.

Title 24 Energy Standards

The California Building Standards Code (California Code of Regulations [CCR], Title 24) contains the implementing regulations for building standards in California. CCR Title 24 Part 1 Chapter 10 and CCR Title 24 Part 6 are known collectively as the California Energy Code. The California Energy Code contains energy efficiency standards for residential and non-residential buildings, which are known as the Building Energy Efficiency Standards. The Building Energy Efficiency Standards were first established in 1978 in response to a legislative mandate to reduce California's energy consumption. The premise for the standards is that energy efficient buildings require less electricity, natural gas, and other fuels. Electricity production from fossil fuels and on-site fuel combustion (for example, for water heating or from the use of on-site generators) result in GHG emissions. Therefore, although not originally created for the purposes of reducing GHG emissions, compliance with the Building Energy Efficiency Standards results in fewer GHG emissions on a building-by-building basis.

The California Energy Commission (CEC) is responsible for creating and updating the Building Energy Efficiency Standards. The standards are updated every three years to reflect and incorporate new energy-efficient technologies, business practices, and methodologies. The latest updates, referred to as the 2019 updates, were published in December 2018 and took effect on January 1, 2020.[59] The new standards focus on four key areas: smart residential photovoltaic systems, updated thermal envelope standards (preventing heat transfer from the interior to exterior and vice versa), residential and nonresidential ventilation requirements, and nonresidential lighting requirements.

Green Building Standards

The 2013 California Green Building Standards Code (24 CCR Part 11; also referred to as CALGreen) took effect January 1, 2014.[60] The Green Building Standards, as updated (2019), require that every new building constructed in California reduce water consumption by 20 percent, divert 50 percent of construction waste from landfills, and install low-pollutant-emitting materials. They also require separate water meters for nonresidential buildings' indoor and outdoor water use, with a requirement for moisture-sensing

[59] California Energy Commission, *2019 Building Energy Efficiency Standards for Residential and Nonresidential Buildings*, December 2018. Available: https://ww2.energy.ca.gov/2018publications/CEC-400-2018-020/CEC-400-2018-020-CMF.pdf.

[60] 24 California Code of Regulations, Part 11, California Building Standards Commission, *2019 California Green Building Standards Code (CALGreen)*. Available: https://www.dgs.ca.gov/BSC/Resources/Page-Content/Building-Standards-Commission-Resources-List-Folder/CALGreen.

irrigation systems for larger landscape projects and mandatory inspections of energy systems (e.g., heat furnace, air conditioner, and mechanical equipment) for nonresidential buildings larger than 10,000 square feet to ensure that all are working at their maximum capacity and according to their design efficiencies.

Executive Orders

California Governor Arnold Schwarzenegger announced the following GHG emission reduction targets for California through Executive Order S-3-05, issued on June 1, 2005: reduce GHG emissions to 2000 levels by 2010, reduce GHG emissions to 1990 levels by 2020, and reduce GHG emissions to 80 percent below 1990 levels by 2050.[61] In 2015, California Governor Edmund G. Brown issued Executive Order B-30-15 to establish a California GHG emissions reduction target of 40 percent below 1990 levels by 2030.[62]

These Executive Orders were followed in 2018 by Executive Order B-55-18, issued by Governor Brown, which established a new statewide goal to achieve carbon neutrality as soon as possible, and not later than 2045, and achieve and maintain negative emissions thereafter.[63] CARB is taking actions to achieve this Executive Order. The agency is working with relevant state agencies to define California's carbon neutrality objective (both quantitatively and descriptively).[64] CARB is also researching emission reduction strategies that can be used to achieve carbon neutrality and studying the economic, policy, and other implications of potential strategies.[65] To date, CARB has not adopted a strategy to achieve carbon neutrality (e.g., via an amendment or an update to the Scoping Plan, discussed below).

Executive Order N-79-20[66] specifies that it shall be a goal of the State that 100 percent of in-state sales of new passenger cars and trucks will be zero-emission by 2035; that 100 percent of medium- and heavy-duty vehicles in the State will be zero-emission by 2045 for all operations where feasible and by 2035 for drayage trucks;[67] and that the State will transition to 100 percent zero-emission off-road vehicles and equipment by 2035 where feasible.

California Assembly Bill 32

Assembly Bill 32 (AB 32), titled the California Global Warming Solutions Act of 2006 (Pavley) and signed by Governor Schwarzenegger in September 2006, required CARB to adopt regulations to require the reporting and verification of statewide GHG emissions and to monitor and enforce compliance with the program.[68] In general, the bill required CARB to cause reductions in statewide GHG emissions to the equivalent level of emissions estimated for 1990 by 2020 (consistent with Executive Order S-3-05).

CARB has taken numerous actions in response to the directives set forth in AB 32. For example, CARB adopted regulations in December 2007 for mandatory GHG emissions reporting. In December 2008, CARB approved the AB 32 Climate Change Scoping Plan (Scoping Plan) outlining the state's strategy to achieve the 2020 GHG emissions limit. The Scoping Plan proposes a comprehensive set of actions designed to reduce overall GHG emissions in California, improve the environment, reduce dependence on oil, diversify California's energy sources, save energy, create new jobs, and enhance public health.[69] On

61 California Executive Order S-3-05, June 1, 2005.
62 California Executive Order B-30-15, April 29, 2015.
63 California Executive Order B-55-18, September 10, 2018.
64 California Air Resources Board, *Carbon Neutrality in California Context Webinar*, January 23, 2019. Available: https://ww3.arb.ca.gov/cc/scopingplan/meetings/012319/cneutrality_ca.pdf.
65 California Air Resources Board, *AB 32 Scoping Plan Events*. Available: https://ww3.arb.ca.gov/cc/scopingplan/meetings/meetings.htm, accessed June 4, 2020.
66 California Executive Order N-79-20, September 9, 2020.
67 Drayage trucks are on-road, diesel-fueled, heavy duty trucks that transport containers and bulk to and from the ports and intermodal railyards, as well as to many other locations.
68 California Assembly Bill 32, Chapter 488, Statutes of 2006.
69 California Air Resources Board, *Climate Change Scoping Plan: A Framework for Change, Pursuant to AB 32 The California Global Warming Solutions Act of 2006*, December 2008. Available: https://ww3.arb.ca.gov/cc/scopingplan/document/adopted_scoping_plan.pdf.

August 24, 2011, the Scoping Plan was re-approved by CARB, including the final supplement to its functional equivalent document, as required by CEQA.[70] The First Update to the Scoping Plan,[71] which guided the continued development and implementation of the state's efforts to fight climate change, was approved by CARB on May 22, 2014.

In late 2017, CARB adopted an update to the Scoping Plan to reflect the Executive Order B-30-15 GHG reduction target of 40 percent below 1990 levels by 2030, a target also identified in SB 32, described below.[72]

California Senate Bill 32

Senate Bill 32 (SB 32), which extends the California Global Warming Solutions Act of 2006 (AB 32) beyond 2020, was approved by the Governor on September 8, 2016.[73] SB 32 requires CARB to adopt rules and regulations to achieve the maximum technologically feasible and cost-effective methods to reduce GHG emissions to ensure that statewide GHG emissions are reduced to at least 40 percent below the 1990 statewide GHG emissions limit no later than December 31, 2030, the target established by Executive Order B-30-15. In its 2017 Scoping Plan, CARB has adopted a strategy for achieving this goal, which takes into account the key programs associated with implementation of the AB 32 Scoping Plan—such as GHG reduction programs for cars, trucks, fuels, industry, and electrical generation—and builds upon, in particular, existing programs related to the Cap-and-Trade Regulation; the Low Carbon Fuel Standard; much cleaner cars, trucks, and freight movement; power generation for the State using cleaner renewable energy; and strategies to reduce methane emissions from agricultural and other wastes by using it to meet the State's energy needs. The 2017 Scoping Plan also addresses, for the first time, GHG emissions from natural and working lands, including the agriculture and forestry sectors.[74]

California Senate Bill 375

Under Senate Bill 375 (SB 375), the Sustainable Communities and Climate Protection Act of 2008, each metropolitan planning organization (MPO) in the state is required to develop a Sustainable Community Strategy through integrated land use and transportation planning and to attain per capita GHG reduction targets for passenger vehicles set by CARB by 2020 and 2035.[75] The Southern California Association of Governments (SCAG) is the MPO for Los Angeles, Orange, Ventura, Riverside, San Bernardino, and Imperial counties. SCAG adopted the 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) for the six-county Southern California region on April 7, 2016.[76] In 2018, CARB issued new per capita reduction targets for the SCAG region of 8 percent by 2020 and 19 percent by 2035.[77] These targets are reflected in SCAG's Final 2020-2045 RTP/SCS, known as Connect SoCal, discussed below.

California Assembly Bill 1493

Enacted on July 22, 2002, Assembly Bill 1493 (AB 1493), commonly known as the Pavley law (named for then-Assembly Member Fran Pavley, who sponsored the bill), required CARB to develop and

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70 California Air Resources Board, *Resolution 11-27*, August 24, 2011. Available: https://ww3.arb.ca.gov/cc/scopingplan/final_res_scoping_plan_08242011.pdf.

71 California Air Resources Board, *First Update to the Climate Change Scoping Plan*, May 2014. Available: https://ww3.arb.ca.gov/cc/scopingplan/2013_update/first_update_climate_change_scoping_plan.pdf.

72 California Air Resources Board, *California's 2017 Climate Change Scoping Plan*, November 2017. Available: https://ww3.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf.

73 California Senate Bill 32, Chapter 249, Statutes of 2016.

74 California Air Resources Board, *California's 2017 Climate Change Scoping Plan*, November 2017. Available: https://ww3.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf.

75 California Senate Bill 375, Chapter 728, Statutes of 2008.

76 Southern California Association of Governments, *Final 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy: A Plan for Mobility, Accessibility, Sustainability and a High Quality of Life*, adopted April 7, 2016. Available: http://scagrtpscs.net/Pages/FINAL2016RTPSCS.aspx.

77 California Air Resources Board, *Resolution 18-12*, adopted March 22, 2018.

adopt regulations that will lead to a reduction in GHGs emitted by passenger vehicles and light-duty trucks. Subsequent regulations adopted by CARB, often referred to as the Pavley regulations, apply to 2009 through 2016 vehicles. CARB estimated that the regulations would reduce GHG emissions from the light-duty and passenger vehicle fleet by 18 percent in 2020 and by 27 percent in 2030, compared to recent years.[78] In 2011, the U.S. Department of Transportation, USEPA, and California announced a single timeframe for proposing fuel and economy standards, thereby aligning the Pavley regulations with the federal standards for passenger cars and light-duty trucks.[79] These reduction standards would be affected by the SAFE Vehicle Rule Part One federal preemption discussed in Section 4.4.3.1.2. As a result, emission estimates included in this analysis were modified to account for potential changes to the emission factors without the Pavley standards.

California Advanced Clean Cars Program

In January 2012, CARB approved a new emissions-control program for vehicles of model years 2017 through 2025. The program combines the control of smog, soot, and GHG into a single package of standards referred to as the Advanced Clean Cars program (13 CCR §1962.1 and 1962.2). The Advanced Clean Cars requirements include new GHG standards for model year 2017 to 2025 vehicles. The Advanced Clean Cars Program also includes amendments to the low emission vehicle (LEV) regulations (referred to as the LEV III regulations; 13 CCR §1900 et seq.), ZEV regulations, and the Clean Fuels Outlet Regulation. The LEV III regulations are aimed at reducing criteria pollutant and GHG emissions from light- and medium-duty vehicles. The ZEV regulation requires manufacturers to produce an increasing number of the very cleanest cars available, including battery electric, fuel cell, and plug-in hybrid electric vehicles. The Clean Fuels Outlet regulation is designed to ensure that fuels such as electricity and hydrogen are available to meet the fueling needs of the new advanced technology vehicles as they come to market.[80,81] The ZEV regulation would be affected by both the SAFE Vehicle Rule Part One federal preemption and also USEPA's proposed withdrawal of California's waiver to set vehicle standards (as discussed in Section 4.4.3.1.2), in the event that these federal actions are ultimately upheld. As a result, emission estimates included in this analysis were modified to account for potential changes to the emission factors without the ZEV regulation.

Low Carbon Fuel Standard

California Executive Order S-01-07 established a statewide goal to reduce the carbon intensity of transportation fuels sold in California by at least 10 percent by 2020 from 2005 levels. The Executive Order also mandated the creation of Low Carbon Fuel Standard (LCFS) for transportation fuels. The LCFS requires that the lifecycle GHG emissions for the mix of fuels sold in California decline on average. Each fuel provider may meet the standard by selling fuel with lower carbon content, using previously banked credits from selling fuel that exceeded the LCFS, or purchasing credit from other fuel providers who have earned credits.[82] In 2018, CARB amended the implementing LCFS regulations to require a 20 percent reduction in the carbon intensity of transportation fuels by 2030.

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78 California Air Resources Board, *Fact Sheet: Climate Change Emission Control Regulations*, December 10, 2004. Available: https://www.arb.ca.gov/cc/ccms/factsheets/cc_newfs.pdf.

79 U.S. Department of Transportation, *EPA, DOT and California Align Timeframe for Proposing Standards for Next Generation of Clean Cars*, January 24, 2011. Available: https://archive.epa.gov/epapages/newsroom_archive/newsreleases/6f34c8d6f2b11e5885257822006f60c0.html.

80 California Air Resources Board, *Advanced Clean Cars Program Homepage*. Available: https://ww2.arb.ca.gov/our-work/programs/advanced-clean-cars-program/about, accessed December 3, 2019.

81 California Air Resources Board, *News Release: California Air Resources Board Approves Advanced Clean Car Rules*, January 27, 2012. Available: https://ww2.arb.ca.gov/news/california-air-resources-board-approves-advanced-clean-car-rules.

82 17 California Code of Regulations, Section 95480 et seq., *Low Carbon Fuel Standard,* amended on January 4, 2019.

Renewable Portfolio Standard

Established by Senate Bill 1078 (SB 1078; Chapter 516, Statutes of 2002), California's Renewable Portfolio Standard (RPS) requires retail sellers of electricity, including investor-owned utilities and community choice aggregators, to obtain at least 20 percent of their supply from renewable sources by 2017. SB 107 (Chapter 464, Statutes of 2006) accelerated the target date to 2010. In November 2008, the Governor signed Executive Order S-14-08, which expanded the RPS's renewable energy target to 33 percent renewable power by 2020. On September 15, 2009, the Governor issued Executive Order S-21-0911 requiring CARB, under its AB 32 authority, to adopt regulations consistent with the RPS target of 33 percent renewable power by 2020. The CARB regulations use a phased-in or tiered requirement to increase the amount of electricity from eligible renewable sources over an eight-year period beginning in 2012. CARB adopted the regulations in September 2010.

In March 2011, the Legislature passed Senate Bill XI-2 (SB XI-2), which was signed into law by the Governor the following month. SB XI-2 requires utility entities to procure renewable energy products equal to 33 percent of retail sales by December 31, 2020, and also established interim targets of 20 percent by December 31, 2013, and 25 percent by December 31, 2016. According to the Los Angeles Department of Water and Power (LADWP), the utility provider for the City of Los Angeles, LADWP achieved the 25 percent renewable energy milestone in 2016.[83] Senate Bill SB 350 of 2015 (Chapter 547, Statutes of 2015) increased the renewable portfolio standard to 50 percent by the year 2030, and also established interim targets of 40 percent by December 31, 2024 and 45 percent by December 31, 2027. Senate Bill 100 (SB 100; Chapter 312, Statutes of 2018) further increased the renewable portfolio standard and accelerated its timeframe for implementation to 50 percent by December 31, 2026, and 60 percent by December 31, 2030. SB 100 also established a policy requiring that eligible renewable energy resources and zero-carbon resources supply 100 percent of retail sales of electricity to California end-use customers and 100 percent of electricity procured to serve all state agencies by December 31, 2045.

Zero-Emission Airport Shuttle Bus Regulation

In June 2019, CARB approved a rule that will require fixed route airport shuttles serving the state's 13 largest airports, including LAX, to transition to 100 percent ZEVs by 2035. The regulation applies to public and private fleets, including parking facilities, rental car agencies, and hotels. With almost 1,000 airport shuttles in operation statewide, the regulation is expected to reduce GHG emissions by at least 500,000 metric tons, with a beneficial economic impact for shuttle fleet owners of an estimated $30 million in reduced fuel and maintenance costs. Interim milestones under the new regulation include at least 33 percent of airport shuttle fleets being zero emission by 2027, increasing to 66 percent by 2031.[84] The rule was identified as a control measure in the South Coast 2016 Air Quality Management Plan (2016 AQMP) discussed below. The GHG emission reduction benefit of this regulation was considered in the analysis in this EIR.

Zero-Emission Airport Ground Support Equipment Measure

In order to promote the development and use of zero-emission airport GSE, CARB is in the process of developing a measure to increase the penetration of zero-emission GSE at California airports. The measure is currently scheduled for Board consideration in late 2020. Because this measure has not yet been adopted, discussion of this measure is provided for informational purposes only; no emissions

[83] City of Los Angeles, Los Angeles Department of Water and Power, *LADWP Achieves 25 Percent Renewable Energy Milestone*, March 23, 2017. Available: http://www.ladwpnews.com/ladwp-achieves-25-percent-renewable-energy-milestone-2/.

[84] California Air Resources Board, *Bulletin - California Air Resources Board approves comprehensive effort to clean up airport shuttles*, June 26, 2019. Available: https://content.govdelivery.com/accounts/CARB/bulletins/24e019a.

reduction has been assumed in the Project's emissions inventories relative to this pending regulatory effort.

4.4.3.1.4 Regional

Regional Transportation Plan/Sustainable Communities Strategy

In accordance with SB 375, described above, SCAG developed an RTP/SCS to reduce per capita GHG emissions within its jurisdiction. SCAG's Regional Council adopted the 2012-2035 RTP/SCS on April 4, 2012. The RTP/SCS included an extensive list of individual transportation projects that aimed to improve the region's mobility and air quality and revitalize the economy. Following adoption of the RTP/SCS, subsequent amendments to the project list were approved on June 6, 2013 and September 11, 2014. The 2012-2035 RTP/SCS aimed to reduce emissions from transportation sources to comply with SB 375 and meet SB 375 regional GHG emission reduction targets for light duty vehicles, improve public health, and reduce air emissions.

SCAG's Regional Council adopted the 2016-2040 RTP/SCS on April 7, 2016, with subsequent amendments to the project list on April 6, 2017 and July 6, 2017. Like the 2012-2035 RTP/SCS, the 2016-2040 RTP/SCS demonstrated how the region will reduce emissions from transportation sources to comply with SB 375. The 2016-2040 RTP/SCS outlined more than $556.5 billion in transportation system investments through 2040.[85,86]

SCAG released the Proposed Final 2020-2045 RTP/SCS, known as Connect SoCal, for Regional Council adoption on May 7, 2020. On that date, the SCAG Regional Council adopted Resolution No. 20-621-1 certifying the Connect SoCal Program Environmental Impact Report (PEIR) and approving Connect SoCal for the limited purpose of transportation conformity to meet the Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) June 1, 2020 submittal deadline as required by the CAA. The FHWA and FTA approved the Transportation Conformity portion of the plan on June 5, 2020.[87] The SCAG Regional Council formally adopted the Final 2020-2045 RTP/SCS on September 3, 2020.[88,89] The final adopted plan did not result in any changes to the policies or strategies in the plan from the Proposed Final.[90] The plan demonstrates how the region will meet its GHG reduction targets as required by Senate Bill 375.

4.4.3.1.5 Local

Sustainable City pLAn/Green New Deal

In 2014, Mayor Eric Garcetti launched the City of Los Angeles' first-ever Sustainable City Plan ("pLAn"). The pLAn was a comprehensive and actionable policy roadmap intended to prepare the City for an

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85 Southern California Association of Governments, *Final 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy: A Plan for Mobility, Accessibility, Sustainability and a High Quality of Life*, adopted April 7, 2016. Available: http://scagrtpscs.net/Pages/FINAL2016RTPSCS.aspx.

86 Southern California Association of Governments, *2016-2040 RTP/SCS - 2016 RTP/SCS Amendments*. Available: http://scagrtpscs.net/Pages/2016RTPSCSAmendments.aspx, accessed December 3, 2019.

87 U.S. Department of Transportation, Federal Highway Administration. *Re: Southern California Association of Governments Connect SoCal Regional Transportation Plan/Sustainable Communities Strategy, 2019 Federal Transportation Improvement Program Amendment 19-12 and associated conformity determination*. June 5, 2020. Available: http://ftip.scag.ca.gov/Documents/SCAGFF12_060520.PDF.

88 Southern California Association of Governments, *Press Release: SCAG Regional Council formally adopts Connect SoCal*, September 3, 2020. Available: http://scag.ca.gov/Documents/PR-SCAG-ConnectSoCal.pdf.

89 Southern California Association of Governments, *Connect SoCal: The 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy of the Southern California Association of Governments,* adopted September 3, 2020. Available: https://www.connectsocal.org/Documents/Adopted/0903fConnectSoCal-Plan.pdf.

90 Southern California Association of Governments, *Connect SoCal Update*, July 2, 2020. Available: https://www.connectsocal.org/Documents/Agendas/rc070220agn04.pdf.

environmentally healthy, economically prosperous, and equitable future for all.[91] Mayor Garcetti released the pLAn in April 2015 along with corresponding Executive Directive No. 7 that incorporated the pLAn into city-wide management.[92] Through the pLAn, Mayor Garcetti committed the City to becoming a national leader in carbon reduction and climate action by eliminating coal from the City's energy mix, prioritizing energy efficiency, and inspiring other cities to take similar action. The pLAn sets targets of reducing GHG emissions below 1990 levels by at least 45 percent by 2025, 60 percent by 2035, and 80 percent by 2050.

In 2019, Mayor Garcetti launched the *Green New Deal* as a comprehensive update to Sustainable City pLAn (2015).[93] The *Green New Deal* includes a number of new initiatives relating to GHG, including globally-recognized adherence to a strict carbon budget that is consistent with the Paris Climate Agreement, adoption of a quantitative GHG reduction pathway that charts a course to carbon neutrality, and accelerated direct and indirect targets relating to GHG, including a target to reduce municipal GHG emissions 55 percent by 2025 and 65 percent by 2035 from 2008 baseline levels, reaching carbon neutral by 2045.

Resilient Los Angeles

In March 2018, Mayor Eric Garcetti released *Resilient Los Angeles*, a comprehensive, strategically coordinated approach to urban resilience.[94] This plan addresses a range of challenges facing Los Angeles, including preparing for climate adaptation. One of the key climate adaptation initiatives in the resiliency plan is the goal of accelerating reductions in GHG emissions and meeting or exceeding climate resilience outcomes consistent with the Paris Climate Agreement by 2020. Another of the actions in *Resilient Los Angeles* is to leverage the modernization at LAX to incorporate sustainability and resilience measures.

Executive Directive No. 25

On February 10, 2020, Los Angeles Mayor Eric Garcetti issued Executive Directive No. 25 to accelerate the *Green New Deal* and adopt new steps and stronger accountability measures to achieve the City's climate objectives.[95] For example, Executive Directive No. 25 includes measures aimed at reducing building energy use and reducing fossil fuel use through transportation improvements. Such measures include, but are not limited to, amending the City's Green Building Code to ensure all new roofs and renovations are cool roofs, reducing carbon in construction materials, and prioritizing micro-grid projects at critical City-owned infrastructure.

City of Los Angeles Green Building Code (LAGBC)

In December 2013, the Los Angeles City Council approved Ordinance No. 182,849, which updated Chapter IX of the Los Angeles Municipal Code (LAMC) to incorporate portions of the 2013 CALGreen Code and add other conservation-related measures to the LAGBC for residential and non-residential development. The requirements of the adopted LAGBC, as updated (2017), apply to new building construction, building renovations, and building additions within the City of Los Angeles.[96] Key measures in the LAGBC related to energy use that apply to nonresidential buildings include a requirement that

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91 City of Los Angeles, Office of the Mayor, Mayor Eric Garcetti, *Sustainable City pLAn, Transforming Los Angeles, Environment - Economy - Equity*, April 8, 2015. Available: https://www.dropbox.com/s/e768n31r3k379w7/the-plan.pdf?dl=0.

92 City of Los Angeles, Office of the Mayor, Mayor Eric Garcetti, *Executive Directive No. 7, Subject: Sustainable City pLAn*, April 8, 2015. Available: https://www.lamayor.org/sites/g/files/wph446/f/page/file/ED7-SustainableCitypLAn.pdf.

93 City of Los Angeles, Office of the Mayor, Mayor Eric Garcetti, *L.A.'s Green New Deal: Sustainable City pLAn*, 2019. Available: http://plan.lamayor.org/sites/default/files/pLAn_2019_final.pdf.

94 Mayor Eric Garcetti, *Resilient Los Angeles*, March 2018. Available: https://www.lamayor.org/sites/g/files/wph446/f/page/file/Resilient%20Los%20Angeles.pdf.

95 City of Los Angeles, Office of the Mayor, Mayor Eric Garcetti, *Executive Directive No. 25, Subject: L.A.'s Green New Deal: Leading by Example*, February 10, 2020. Available: https://www.lamayor.org/sites/g/files/wph446/f/page/file/20200210ExecutiveDirective25.pdf.

96 City of Los Angeles, Los Angeles Municipal Code, Chapter IX, Article 9, *Green Building Code*, as amended.

energy conservation for new buildings must meet or exceed CEC requirements set forth in the California Building Energy Efficiency Standards.

LAWA Sustainability Plans and Guidelines

On September 7, 2017, LAWA adopted the Sustainable Design and Construction Policy.[97] Under this policy, new buildings and major building renovation projects are required to achieve a minimum of LEED® Silver certification. New LAWA or tenant building construction and building renovation projects that are not eligible for LEED® certification, such as runways, taxiways, and civil infrastructure, or are exempted by LAWA's Sustainability Review Committee, are required to adhere to LAWA's Sustainable Design and Construction Requirements, which incorporate sustainability concepts from the LEED® system as well as the LAGBC, Envision, and other airport sustainability guidelines.[98] The requirements will ensure that all projects at LAWA facilities are environmentally responsible and resource-efficient throughout the structure's life-cycle, from siting to design, construction, operation, maintenance, and renovation, reflecting LAWA's commitment to sustainability.

In line with these evolving policies, LAWA has been implementing a carbon management strategy for several years. In August 2016, LAWA adopted an internal commitment to reduce GHG emissions from LAWA owned and operated sources 45 percent below 1990 levels by 2025, 60 percent by 2035, and 80 percent by 2050.[99] Additionally, in 2017, LAWA upgraded LAX's ACA, which is granted by ACI, from "Level 2 Reduction" to Level 3 (Optimization).[100,101]

LAWA's most recent carbon management goals are outlined in the airport's *Sustainability Action Plan (SAP)*, which was adopted in November 2019.[102] Building upon past sustainability efforts and programs, and to align with Mayor Eric Garcetti's *Green New Deal*, the SAP is designed to address climate change and ensure a healthy, prosperous future for the region. The goals in the SAP are aimed at organization-wide improvements and are not intended or designed to be applied on an individual project-by-project basis. The primary goal relating to GHG emissions is to achieve net zero carbon emissions (i.e., carbon neutrality) for LAWA operations by 2045, with interim goals of a 55 percent reduction by 2025 compared to LAWA baseline 1990 levels and a 65 percent reduction by 2035. The SAP also has goals to improve energy efficiency and to achieve 100 percent renewable energy by 2045.

As described in Section 4.1.1, *Air Quality*, in December 2019, LAWA entered into a voluntary Memorandum of Understanding (MOU) with the SCAQMD under which LAWA developed Air Quality Improvement Measures (AQIM) to further reduce air pollutant emissions from non-aircraft sources

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97 City of Los Angeles, Los Angeles World Airports, *LAWA Sustainable Design and Construction Policy*, September 7, 2017. Available: https://www.lawa.org/-/media/lawa-web/tenants411/file/lawa-sustainable-design-and-construction-policy.ashx.

98 City of Los Angeles, Los Angeles World Airports, *Los Angeles International Airport Sustainable Design & Construction Requirements*, August 4, 2017. Available: https://www.lawa.org/-/media/lawa-web/tenants411/file/sustainable-design-construction-requirements.ashx.

99 Flint, Deborah, Chief Executive Officer, Los Angeles World Airports, *Memorandum, Subject: LAWA's Commitment to Carbon Management Goals*, August 31, 2016. Available: https://www.lawa.org/-/media/lawa-web/sustainability/files/committment-to-carbon-management-goals-memo-to-staff.ashx.

100 Airports are certified under ACA at four progressively stringent levels of participation with recognition of improvements at each stage. The first stage, Level 1 Mapping, requires airports to produce a Scope 1 and 2 "carbon footprint" for the airport, along with evidence of a publicly available environmental/carbon policy endorsed at the highest level of airport management. Independent verification of an airport's carbon footprint is required on entry into the program, and then every two years on renewal at the same level, or upon each upgrade. The ACA program notes that the carbon footprint serves as the basis for developing carbon management and engagement plans (Level 2 Reduction and Level 3 Optimization). An airport may then also seek to achieve carbon neutrality for CO_2 emissions under its direct control (Scope 1 and 2) by offsetting its residual emissions which it cannot reduce by other means (Level 4 Neutrality).

101 City of Los Angeles, Los Angeles World Airports, *News Release: Los Angeles World Airports (LAWA) Leads the Way on Sustainability – Van Nuys Airport Recognized as Only One of Two General Aviation Airports in World to Achieve Airport Carbon Accreditation "Level 2 – Reduction" Tier; LAX Progresses to "Level 3 – Optimization" as Only One of Three U.S. Airports at this Tier*, September 18, 2018. Available: https://www.lawa.org/en/News%20Releases/2017/News%20Release%2025.

102 City of Los Angeles, Los Angeles World Airports, *LAWA Sustainability Action Plan*, 2019. Available: https://cloud1lawa.app.box.com/s/63i2teszgnld5aws68xbou6yc0inl5rp.

operating at LAX. The intent of the MOU is to provide voluntary emissions reductions that can be applied to the South Coast Ozone State Implementation Plan (SIP), as updated with the 2016 South Coast AQMP.[103] One component identified in the MOU is the enhanced GSE Emission Reduction Policy,[104] with new GSE airport-wide emission factor targets to be achieved at rates faster than are required under existing off-road equipment standards by 2023 and 2031. Further, these new airport-wide emission factor targets have been formally adopted by the City of Los Angeles Board of Airport Commissioners as an update to the existing GSE policy and would apply to all GSE used at Concourse 0 and Terminal 9. Although these measures are primarily designed to control nitrogen oxides (NO_X) emissions, there are GHG co-benefits. The two remaining measures are the LAX Alternatives Fuel Vehicle Incentive Program, which creates an incentive program to encourage deployment of zero or near-vehicles at LAX through 2032, and the Zero-Emission Bus Program, which aims to replace 20 percent and 100 percent of LAWA-owned and operated buses with zero-emission buses by 2023 and 2031.

In addition, as discussed in Section 4.4.2.3, the proposed Project would comply with LAWA's DCH,[105] which includes policies and requirements aimed at reducing environmental impacts associated with construction projects at LAX, including and GHG emissions, among others. Key provisions in the DCH that pertain to reducing GHG emissions and have been incorporated into the emissions calculations to the extent feasible include the following:

- Idling or queuing of diesel-fueled vehicles and equipment shall be limited to five minutes.
- Every effort shall be made to utilize grid-based electric power at any construction site, where feasible. Grid-based power can be from a direct hookup or a tie in to electricity from power poles.
- Trucks with a gross vehicle weight rating of 14,001 pounds are required to comply with USEPA 2010 emissions standards or next cleanest vehicle available, as approved by LAWA. In addition, off-road diesel-powered equipment are required to meet USEPA Tier 4(final) standards or the next cleanest equipment available, as approved by LAWA, with some exceptions.
- Speed limits on unpaved construction sites shall be limited to 15 miles per hour, and haul vehicles shall maintain at least six inches of freeboard.
- All new aircraft parking positions shall be installed with ground power and pre-conditioned air, where applicable, as coordinated and approved by LAWA Environmental Programs Group (EPG).
- New LAWA or tenant building construction or renovation projects shall meet one of the following:
  - LEED® Silver certification if the project meets the U.S. Green Building Code (USGBC) and LAWA LEED® Eligibility Criteria, unless exempted by LAWA's Sustainability Review Committee,
  - Los Angeles Green Building Code (LAGBC) Tier 1 requirements if not eligible for LEED® certification, or
  - LAWA Sustainable Design and Construction requirements if not eligible for LEED® certification and unable to meet LAGBC Tier 1 requirements.
- LAWA or tenant non-building projects shall meet LAWA Sustainable Design and Construction requirements if not eligible for or exempted from LEED® certification. Typical airport non-building projects include: runways, taxiways, and other airfield flatwork; roadways, bridges and tunnels; pavement rehabilitation; civil infrastructure/site utility work; exterior lighting; and landscaping.

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[103] *Memorandum of Understanding between the South Coast Air Quality Management District and the City of Los Angeles Department of Airports*, December 2019. Available: http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/facility-based-mobile-source-measures/mou-la-department-of-airports.pdf?sfvrsn=6.

[104] The MOU enhances the LAX GSE Emissions Reduction Policy originally adopted in 2015, which was the first policy of its kind in the nation. The enhanced policy has more stringent emission factor targets and extends to policy requirements to 2031.

[105] City of Los Angeles, Los Angeles World Airports, *2020 Design and Construction Handbook (DCH), Version 1.0,* June 30, 2020. Available: https://www.lawa.org/en/lawa-businesses/lawa-documents-and-guidelines/lawa-design-and-construction-handbook.

Section 4.1.1.3.1 identifies additional measures that would control other air pollutant emissions, including toxic air contaminants.

4.4.3.2 Environmental Setting

4.4.3.2.1 Statewide GHG Emissions

California, due in part to its large size and large population, is a substantial contributor of global GHGs, and is the second largest contributor to GHG emissions in the United States (Texas is first).[106] As mandated by the Global Warming Solutions Act of 2006 (AB 32), CARB is required to compile GHG inventories for the State of California, including establishment of the 1990 Greenhouse Gas Emissions Level. Inventories have been prepared for 2000 through 2017. Based on the 2017 GHG inventory data (i.e., the latest year for which data are available), California emitted 424.10 $MMTCO_2e$ if emissions associated with imported electrical power are included, and approximately 400 $MMTCO_2e$ if these emissions are excluded.[107]

Table 4.4-1 identifies and quantifies statewide anthropogenic (man-made) GHG emissions and sinks in 1990 and 2017.[108,109] Although a large overall contributor to GHG emissions, California had the third lowest CO_2 emissions per capita from fossil fuel combustion in the U.S. (including District of Columbia), due to the success of its energy efficiency and renewable energy programs and commitments that have lowered the State's GHG emissions rate of growth.[110]

Between 1990 and 2017, the population of California grew by approximately 9.7 million (29.8 to 39.5 million).[111] This represents an increase of approximately 32 percent from 1990 population levels. In addition, the California economy, measured as gross state product, grew from $773 billion in 1990 to $2.81 trillion in 2017, representing an increase of approximately 263 percent (over twice the 1990 gross state product).[112] Despite the population and economic growth, California's GHG emissions during that period decreased by approximately 0.6 percent.

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106 U.S. Energy Information Administration, *Energy-Related Carbon Dioxide Emissions by State, 2005-2016*, Table 1. Available: https://www.eia.gov/environment/emissions/state/analysis/pdf/table1.pdf; accessed March 20, 2020.

107 California Air Resources Board, *California Greenhouse Gas Inventory for 2000-2017 - by Category as Defined in the 2008 Scoping Plan*, August 12, 2019. Available: https://ww3.arb.ca.gov/cc/inventory/data/tables/ghg_inventory_scopingplan_sum_2000-17.pdf.

108 Per USEPA, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2017* (p. ES-1), "The term 'anthropogenic,' in this context, refers to greenhouse gas emissions and removals that are a direct result of human activities or are the result of natural processes that have been affected by human activities (IPCC 2006)." Available: https://www.epa.gov/sites/production/files/2019-04/documents/us-ghg-inventory-2019-main-text.pdf.

109 The term "sink," in this context, refers to a natural or artificial reservoir that accumulates and stores greenhouse gases for an indefinite period.

110 U.S. Energy Information Administration, *Energy-Related Carbon Dioxide Emissions by State, 2005-2016*, February 2019, page 4. Available: https://www.eia.gov/environment/emissions/state/analysis/pdf/stateanalysis.pdf.

111 California Department of Finance, Demographic Research Unit, *Report E-5 Population and Housing Estimates for Cities, Counties, and the State, January 1, 2011–2019 with 2010 Benchmark*, May 2019. Available: http://www.dof.ca.gov/Forecasting/Demographics/Estimates/E-5/.

112 California Department of Finance, *Gross Domestic Product, California*. Available: http://www.dof.ca.gov/Forecasting/Economics/Indicators/Gross_State_Product/. Estimated gross state product for 1990 and 2017 are based on current dollars as of 2018.

Table 4.4-1
California Statewide GHG Emissions (1990 and 2017)

Category	Total 1990 Emissions ($MMTCO_2e$)[1]	Percent of Total 1990 Emissions	Total 2017 Emissions ($MMTCO_2e$)	Percent of Total 2017 Emissions
Transportation	150.6	34%	169.9	40%
Electric Power	110.5	25%	62.4	15%
Commercial	14.4	3%	15.1	4%
Residential	29.7	7%	26.0	6%
Industrial	105.3	24%	89.4	21%
Recycling and Waste	--[2]	--[2]	8.9	2%
High GWP/Non-Specified[3]	1.3	<1%	20.0	5%
Agriculture	25.34	6%	32.4	8%
Forestry	0.2	<1%	--[4]	--[4]
Forestry Sinks	-6.7	--	--[4]	--[4]
Net Total[5]	**430.7**	**100%**	**424.1**	**100%**

Source: California Air Resources Board, *California Greenhouse Gas Inventory (millions of metric tonnes of CO_2 equivalent) – By Sector and Activity*, 2007. Available: https://ww3.arb.ca.gov/cc/inventory/archive/tables/ghg_inventory_sector_sum_90-04_ar4.pdf; California Air Resources Board, *California Greenhouse Gas Inventory for 2000-2017 – by Category as Defined in the 2008 Scoping Plan*, August 12, 2019. Available: https://ww3.arb.ca.gov/cc/inventory/data/tables/ghg_inventory_scopingplan_sum_2000-17.pdf.

Notes:

1 The original 1990-2004 emissions inventory was prepared using the IPCC Second Assessment Report (SAR). IPCC periodically updates GWPs and CARB has been using the IPCC Fourth Assessment Report (AR4) since 2014. The 1990 emissions shown in this table were converted from SAR to AR4 GWPs to be consistent with current GHG inventory practices.

2 Included in other categories for the 1990 emissions inventory.

3 High GWP gases are not specifically called out in the 1990 emissions inventory.

4 Revised methodology under development (not reported for 2017).

5 Numbers may not add due to rounding.

Key:
$MMTCO_2e$ = million metric tons of carbon dioxide equivalent; GWP = global warming potential

4.4.3.2.2 Existing LAX GHG Emissions

Existing (baseline) operational emissions (2018) for airport sources are presented in **Table 4.4-2**. Motor vehicle emissions are associated with airport-related trips on the roadway network. Parking emissions are associated with motor vehicle emissions in parking lots.

Table 4.4-2
2018 Existing Airport Operational GHG Emissions

Emission Source	CO_2e (MT/year)	Percent of Total
Aircraft	930,589	43
APUs	45,135	2
GSE	27,723	1
Stationary	97,397	5
Autos	1,020,793	47
Parking	30,186	1
TOTALS[1]	**2,151,823**	**100**

Source: **Appendix C** of this EIR.

Note:
[1] Numbers may not add due to rounding.

Key:
CO_2e = carbon dioxide equivalent; MT/year = metric tons per year

4.4.4 Thresholds of Significance

A significant greenhouse gas emissions impact would occur if the proposed Project would:

Impact 4.4-1 Generate GHGs, either directly or indirectly,[113] that may have a significant impact on the environment.

Impact 4.4-2 Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.

These thresholds are from Appendix G of the State CEQA Guidelines.

Section 15064.7 of the State CEQA Guidelines defines a threshold of significance as an identifiable quantitative, qualitative, or performance level of a particular environmental effect, compliance with which determines the level of impact significance. CEQA leaves the determination of significance to the reasonable discretion of the lead agency and encourages lead agencies to develop and publish thresholds of significance to use in determining the significance of environmental effects.

When using thresholds of significance, a lead agency may consider thresholds adopted or recommended by other public agencies. Nevertheless, as discussed previously, neither the State of California, SCAQMD, or the City of Los Angeles has established project-level specific quantitative (numeric) significance thresholds for GHG emissions.

In order to identify a definitive quantitative basis by which to evaluate the proposed Project's impacts in light of the first GHG threshold of significance presented above, (i.e., generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment), the criterion used is whether Project construction and operations would result in a net increase in GHG emissions over baseline (2018) conditions. This threshold reflects the fact that neither the State of California, SCAQMD, nor the City of Los Angeles has developed a non-zero quantitative (numeric) threshold for determining the significance of GHG emissions.

[113] The use of "direct" and "indirect" in the State CEQA Guidelines is not necessarily the same as the use of that terminology when referring to Scope 1, 2, and 3 emissions.

In order to determine the Project-related operations GHG impacts, the total GHG emissions associated with the proposed Project that would occur in 2028 (2028 With Project) were compared to the baseline emissions in 2018 (2018 Baseline). The difference between these two conditions was used to determine the significance of Project-related GHG emissions in 2028.

CEQA requires that, normally, a proposed project be compared to existing conditions (in this case 2018 baseline conditions) for the purpose of making a significance determination. For the proposed Project, the Project-related incremental GHG emissions (i.e., the GHG emissions of the proposed Project in 2028 compared to 2018 baseline conditions) would be influenced by factors that are not attributable to the Project itself. Specifically, Project-related incremental GHG emissions include future GHG emissions from background growth in passengers and aircraft operations that are projected to occur with or without the proposed Project. The incremental emissions also account for lower emission factors for motor vehicles from improved engine technology. In order to remove the influence of background growth and the differences in motor vehicle emission factors between 2018 and 2028, a second comparison is provided of GHG emissions from the proposed Project in 2028 (2028 With Project) and GHG emissions from the Future Without Project scenario in 2028 (2028 Without Project). The difference between these two scenarios highlights the GHG emissions impacts of the proposed Project compared to future GHG emissions that are estimated to occur without the proposed Project. This comparison is made for informational purposes only; the significance of the proposed Project impacts is not based on this comparison.

4.4.5 Project Impacts

4.4.5.1 Impact 4.4-1

Summary Conclusion for Impact 4.4-1: Construction and operation of the proposed Project would generate GHGs, directly and indirectly, that may have a significant impact on the environment. This would be a *significant impact*. Even with mitigation, this would remain a *significant and unavoidable impact* for construction and operations.

4.4.5.1.1 Construction

Construction Activities

GHG emissions associated with the construction of the proposed Project were estimated for on-road and off/non-road vehicles and equipment (e.g., excavators, graders, worker vehicles, etc.) for the anticipated construction activities. The estimates were based on off-road construction equipment types, models, horsepower, load factor, and estimated maximum daily hours of operation developed for the proposed Project.[114] Off-road diesel exhaust emission factors were based on CARB's OFFROAD2017[115] emissions model. Emissions for off-road equipment were calculated by multiplying an emission factor by the horsepower, load factor, usage factor, and operational hours for each type of equipment.

[114] City of Los Angeles, Los Angeles World Airports, *LAX Airfield and Terminal Modernization Program (ATMP) Air Quality Modeling Data & Assumptions*, prepared by Connico Incorporated, September 2019 (with updates October 2019).

[115] California Air Resources Board, *OFFROAD2017 – ORION v1.0.1*. Available: https://www.arb.ca.gov/orion/, accessed October 16, 2019.

Table 4.4-3 presents the GHG emissions inventory results for the construction activities, which would occur from 2021 through 2028. As shown, the annual estimated GHG emissions associated with Project construction would range from 1,639 to 14,240 MT of CO_2e (with the exception of 2028, the final year of construction, when GHG emissions would only be 3 MT/year). This year-to-year variation is largely attributable to the differences in project development timeframes and construction needs (see **Appendix C**). When summed, the proposed Project's total construction-related GHG emissions for the 8-year construction period would be 50,827 MT of CO_2e.

Temporary Runway Closure

As described in Chapter 2, *Description of the Proposed Project,* construction of the airfield improvements would require the temporary closure of Runway 6L-24R for approximately 4.5 months in 2023 and of Runway 6R-24L for approximately 4.5 months in 2024. During these times, aircraft operations at LAX would occur on three runways (i.e., one runway in the north airfield and two runways in the south airfield). The temporary closures of these runways would increase the distances that aircraft would taxi during the closures, as described more fully in Section 4.1.1, *Air Quality* (Section 4.1.1.5.1.1 specifically). Moreover, three-runway operations would be less efficient, resulting in a temporary increase in aircraft taxi-idle times and corresponding GHG emissions. **Table 4.4-4** provides a comparison of incremental 2023 and 2024 GHG emissions with and without the temporary runway closures. As shown in the table, as a result of the temporary closures, GHG emissions would be 56,226 MT CO_2e higher than they would be without the closures, an increase of approximately 16 percent.

As noted in Section 4.4.2.1, construction emissions were amortized over the lifetime of the proposed Project in accordance with SCAQMD guidance, which is assumed to be 30 years. Total emissions from construction activities (50,827 $MTCO_2e$), the closures of Runway 6L-24R (27,575 $MTCO_2e$), and the closure of Runway 6R-24L (28,651 $MTCO_2e$) would equal 107,053 $MTCO_2e$. The total CO_2e amortized over the life of the proposed Project improvements (total emissions divided by 30) is equal to 3,568 $MTCO_2e$ per year. These amortized construction emissions were added to the operational emissions in 2028, and the total was compared to the "no net increase" emissions threshold (see Section 4.4.5.1.2 below).

4.4.5.1.2 Operations

As noted in Section 4.4.4, the GHG analysis associated with operation of the proposed Project compares emissions from 2028 With Project to 2018 baseline conditions to determine the significance of operational GHG emissions under CEQA. Additionally, the 2028 With Project scenario was compared to the 2028 Without Project scenario for informational purposes; however, the level of significance of Project-related GHG emissions was not determined using this comparison.

Table 4.4-3
Construction-Related GHG Emissions for the Proposed Project

Emissions Source	Total CO_2e (MT/year)								Project Total CO_2e (MT)[1]
	2021	2022	2023	2024	2025	2026	2027	2028	
Off-Road, On-Site Equipment	2,145	4,812	8,286	7,224	4,752	1,815	959	1	29,995
On-Road, Off-Site Equipment	708	1,698	2,780	2,115	1,108	446	192	1	9,049
On-Road, On-Site Equipment	138	1,268	3,174	3,743	2,283	688	488	1	11,783
Total[1]	**2,992**	**7,778**	**14,240**	**13,082**	**8,143**	**2,949**	**1,639**	**3**	**50,827**

Source: **Appendix C** of this EIR.

Note:
[1] Numbers may not add due to rounding.

Key:
CO_2e = carbon dioxide equivalent; MT/year = metric tons per year

Table 4.4-4
Aircraft Taxi-Idle GHG Emissions with Temporary Runway Closure

2023 – Closure of Runway 6L-24R (MT/year CO_2e)			2024 – Closure of Runway 6R-24L (MT/year CO_2e)			Total Increase[1,2]	
Without Closure	With Closure	Incremental Difference[2]	Without Closure	With Closure	Incremental Difference[2]	MT CO_2e	Percent
174,847	202,421	27,575	181,672	210,323	28,651	56,226	16

Source: **Appendix C** of this EIR.

Note:
[1] The aircraft taxi-idle incremental emissions presented are representative of both the closure of Runway 6L-24R (2023) and of the closure of Runway 6R-24L (2024).
[2] Numbers may not add due to rounding.

Key:
CO_2e = carbon dioxide equivalent; MT/year = metric tons per year

Comparison of 2028 With Project and 2018 Baseline Conditions

Operational emissions of GHGs associated with the proposed Project at project buildout are presented in **Table 4.4-5** in comparison to 2018 baseline emissions. Amortized GHG emissions from construction activities and from the construction-related runway closures in 2023 and 2024 that would result from the proposed Project are also provided in the table in order to disclose the full effects of the proposed Project on annual CO_2e emissions.

Table 4.4-5
Construction (Amortized) and Operational GHG Emissions for the Proposed Project as Compared to 2018 Baseline Conditions

Emission Source	Baseline Conditions (2018)		Proposed Project (2028)		Incremental Difference	
	MT/Yr CO_2e	Percent of Total	MT/Yr CO_2e	Percent of Total	MT/Yr CO_2e	Percent Change
Aircraft	930,589	43	1,142,950	48	212,362	22.8
APUs	45,135	2	48,941	2	3,806	8.4
GSE	27,723	1	19,626	1	(8,098)	(29.2)
Stationary	97,397	5	107,490	5	10,093	10.4
Autos	1,020,793	47	1,005,382	43	(15,410)	(1.5)
Parking	30,186	1	28,742	1	(1,444)	(4.8)
Construction[1]	--	--	3,568	<1	3,568	100
TOTALS[2]	**2,151,823**	**100**	**2,356,700**	**100**	**204,877**	**9.5**

Source: **Appendix C** of this EIR.

Notes:
Parentheses indicate negative values.
[1] Construction-related GHG emissions, including incremental emissions related to runway closures, amortized over 30 years.
[2] Numbers may not add due to rounding.

Key:
APU = auxiliary power unit; GSE = ground service equipment; CO_2e = carbon dioxide equivalent; MT/year = metric tons per year

As shown in Table 4.4-5, incremental emissions in 2028 with implementation of the proposed Project would result a net increase in CO_2e of 204,877 MT/year as compared to 2018 baseline conditions. The future increase in GHG emissions as compared to 2018 baseline conditions is primarily attributable to increased aircraft activity at LAX that is projected to occur irrespective of the proposed Project; aircraft emissions in 2028 with implementation of the proposed Project would be virtually identical to emissions in 2028 without the Project. The increased aircraft emissions would be partially offset by decreases in automobile (-15,410 MT), parking (-1,444 MT), and GSE (-8,098 MT) emissions. The proposed Project would also add construction-related GHG emissions, as well as stationary source emissions attributable to Concourse 0 and Terminal 9, which would increase emissions compared to 2018 baseline conditions. An increase in APU emissions would also occur because total aircraft operations would increase between 2018 and 2028.

Two specific changes regarding motor vehicle emissions would occur under the proposed Project as compared to 2018 baseline conditions: (i) the vehicle miles traveled (VMT) would increase due to regional growth in population and associated vehicle travel demand, and (ii) the engine exhaust emission factors (emission rates in grams per mile) would decrease as older vehicles are replaced with newer ones that comply with cleaner emission standards. For GHG emissions, the decrease in engine exhaust emission factors would be greater in magnitude than the increase in VMT between 2018 and 2028; therefore, the

emissions of these pollutants from automobile-related sources would decrease when comparing the 2028 proposed Project to baseline (2018) conditions.

A similar emissions reduction would occur with respect to GSE emissions. As a result, although there would be more GSE equipment operating hours in 2028 with implementation of the proposed Project, the cleaner GSE fleet would result in a decrease in emissions in 2028 compared to 2018.

Comparison of 2028 With Project and 2028 Without Project

As noted in Section 4.4.4, GHG emissions in 2028 With Project were compared to emissions in 2028 Without Project for informational purposes. The purpose of this comparison was to remove the influence of background growth and differences in motor vehicle emission factors between 2018 and, thereby, to highlight the GHG emissions impacts of the proposed Project compared to future GHG emissions that are estimated to occur without the Project. The comparison between emissions from the 2028 With Project scenario and the 2028 Without Project scenario is provided in **Table 4.4-6**. As shown in Table 4.4-6, total aircraft-related GHG emissions, which are the single largest source of GHG emissions at LAX, would decrease slightly in 2028 with implementation of the proposed Project as compared to conditions without the Project. This is due to the increased efficiency of the airfield with Project implementation. However, as also shown in Table 4.4-6, in addition to the added stationary source and construction emissions noted above, the proposed Project would result in increased surface traffic-related emissions in 2028 as a result of the proposed changes to the roadway system and additional employment that would cause an increase in VMT. Overall, GHG emissions with implementation of the proposed Project would be higher than without the Project, resulting in incremental increase of 21,273 MT/year in 2028.

Table 4.4-6
Construction (Amortized) and Operational GHG Emissions for the Proposed Project as Compared to Future Without the Project

Emission Source	2028 Without Project		2028 With Project		Incremental Difference	
	MT/Yr CO_2e	Percent of Total	MT/Yr CO_2e	Percent of Total	MT/Yr CO_2e	Percent Change
Aircraft	1,143,999	49	1,142,950	48	(1,048)	(0.1)
APUs	50,253	2	48,941	2	(1,312)	(2.6)
GSE	19,626	1	19,626	1	0	0.0
Stationary	97,397	4	107,490	5	10,093	10.4
Autos	995,885	43	1,005,382	43	9,497	1.0
Parking	28,268	1	28,742	1	474	1.7
Construction[1]	--	--	3,568	<1	3,568	100
TOTALS[2]	**2,335,427**	**100**	**2,356,700**	**100**	**21,273**	**0.9**

Source: **Appendix C** of this EIR.

Notes:
Parentheses indicate negative values.

[1] Construction-related GHG emissions, including incremental emissions related to runway closures, amortized over 30 years.

[2] Numbers may not add due to rounding.

Key:
APU = auxiliary power unit; GSE = ground service equipment; CO_2e = carbon dioxide equivalent; MT/year = metric tons per year

4.4.5.1.3 Conclusion

As described in Section 4.4.3.1.3, State CEQA Guidelines Section 15064.4 calls for a lead agency to make a "good-faith effort" to "describe, calculate, or estimate" GHG emissions in CEQA environmental documents, and, in assessing significant impacts, to consider the extent to which the project may increase or reduce GHG emissions as compared to the existing environmental setting, and whether the project emissions would exceed a threshold of significance that the lead agency determines applies to the project. GHG emissions associated with construction and operation of the proposed Project are quantified in Sections 4.4.5.1.1 through 4.4.5.1.2 above.

As shown in Table 4.4-5, with implementation of the proposed Project, LAX-related annual GHG emissions would be 2,356,699 MT of CO_2e in 2028, an increase of 204,877 MT compared to baseline (2018) GHG emissions. This represents a 9.5 percent increase over baseline GHG emissions at LAX.

As also indicated in Table 4.4-5, the majority (i.e., over 50 percent) of the GHG emissions associated with future operation of the proposed Project are related to aircraft sources (i.e., aircraft, APU, and GSE). LAWA does not have authority to regulate aircraft operations or emissions from aircraft engines. Design changes, including the proposed airfield improvements, terminal gate configurations, and the substantial decommissioning of the West Remote Gates with implementation of the proposed Project would result in decreased GHG emissions. The increased aircraft emissions would be partially offset by decreases in automobile, parking, and GSE emissions. The proposed Project would also add construction-related GHG emissions, as well as stationary source emissions attributable to Concourse 0 and Terminal 9, which would increase emissions compared to 2018 baseline conditions. An increase in APU emissions would also occur because total aircraft operations would increase between 2018 and 2028.

The net increase in GHG emissions in 2028 over baseline (2018) conditions is considered to be a ***significant impact*** on the environment.

4.4.5.1.4 Mitigation Measures

As noted above, the proposed Project would result in an increase in GHG emissions from construction and operations. Mitigation proposed to reduce significant impacts related to GHG emissions is provided below. The mitigation measures are grouped in terms of measures that would serve to reduce both GHG emissions and criteria air pollutants (i.e., CO, NO_X SO_X, PM_{10}, and $PM_{2.5}$), and measures that would serve to reduce only GHG emissions. The mitigation measures are labeled accordingly.

- **MM-AQ/GHG (ATMP)-1. Rock Crushing Operations.**

  LAWA shall require Airfield and Terminal Modernization Project contractors to conduct rock-crushing operations on-site to reuse waste rock/concrete generated during construction of the Airfield and Terminal Modernization Project to the maximum extent feasible (determined based on facility capacity and capability, project schedule, costs, and regulatory conditions). Rock-crushing operations (rock-crushing, material laydown, and stockpiling) shall be located away from residential areas in all cases.

- **MM-AQ/GHG (ATMP)-2. Use of Renewable Diesel Fuel.**

  LAWA shall require Airfield and Terminal Modernization Project contractors to use renewable diesel fuel in proposed Project construction off-road equipment and on-site, on-road trucks (i.e., on-site water trucks), as feasible based on commercial renewable fuel availability. For purposes of this measure, commercially-available renewable fuel is defined as renewable fuel that is available in the regional area at a comparable price (i.e., without a substantial premium) and not incurring substantial transportation costs (i.e., higher costs associated with having to transport it to the Project site over substantially longer distances from the supplier[s] of renewable diesel fuel).

- **MM-AQ/GHG (ATMP)-3. Parking Cool Roof.**

  LAWA shall include in the design requirements for the Airfield and Terminal Modernization Project that a cool roof be installed at the Terminal 9 parking facility to reduce energy use and urban heat-island effects. This requirement will not apply if solar panels are instead installed at the Terminal 9 parking facility.

- **MM-AQ/GHG (ATMP)-4. EV Charging Infrastructure.**

  LAWA shall install EV charging infrastructure in the Terminal 9 parking facility beyond the minimum amount required by code. The exact number of spaces and types of parking (Electrical Vehicle Supply Equipment [EVSE] or Electric Vehicle Charging Stations [EVCS]) shall be determined during project design and shall exceed the minimum requirements for EVSE and EVCS specified in the code at the time of design by at least 5 percent.

- **MM-AQ/GHG (ATMP)-5. Electric Vehicle Purchasing.**

  LAWA shall update the Electric Vehicle Purchasing Policy to require 100 percent of LAWA's light-duty vehicle fleet to be all-electric by 2031.

- **MM-AQ/GHG (ATMP)-6. Solar Energy Technology.**

  LAWA shall implement solar energy technology, such as, but not limited to, photovoltaic solar panels on Airfield and Terminal Modernization Project buildings and facilities where feasible based on costs, grid tie-in capability, environmental clearance, compliance with FAR Part 77, and applicable FAA requirements for land leases and funding.

- **MM-GHG (ATMP)-1. Demolition Waste.**

  LAWA shall require Airfield and Terminal Modernization Project construction contractors to recycle or salvage a minimum of 85 percent of non-hazardous construction and demolition waste generated directly from construction of the Airfield and Terminal Modernization Project.

- **MM-GHG (ATMP)-2. Organic Waste Collection and Diversion.**

  LAWA shall require that waste collection procedures at Concourse 0 and Terminal 9 conform with LAWA's Organic Waste Collection Program (which is otherwise voluntary).

- **MM-GHG (ATMP)-3. Green Procurement.**

  LAWA shall develop and adopt an airport-wide Green Procurement Policy applicable to LAWA purchasing which will apply to the Airfield and Terminal Modernization Project. The Green Procurement Policy shall identify requirements and standards for products or services that have a lesser or reduced effect on human health and the environment when compared with competing products or services that serve the same purpose.

- **MM-GHG (ATMP)-4. Enhanced Recycling.**

  LAWA shall enhance the existing recycling program. The enhancements shall include expanding the number of facilities in the program (including Concourse 0 and Terminal 9), updating agreements requiring tenant diversion goals, and incorporating necessary provisions from the Green Procurement Policy.

- **MM-GHG (ATMP)-5. Landscaping Water.**

  LAWA shall use only non-potable water for on-airport landscaping associated with the Airfield and Terminal Modernization Project.

In addition to these measures, MM-T (ATMP)-1, the Vehicle Miles Traveled (VMT) Reduction Program presented in detail in Section 4.8, *Transportation*, of this EIR (specifically in Section 4.8.5.2.2), provides for several strategies for reducing vehicular travel which, in turn, would reduce GHG emissions.

The following mitigation measure would apply to the implementation of all construction-related mitigation measures associated with the proposed Project, including mitigation measures for construction-related GHG emissions.

- **MM-C (ATMP)-1. Construction Mitigation Oversight.**

  LAWA shall require Airfield and Terminal Modernization Project prime contractors to designate an individual responsible for ensuring implementation of all construction-related mitigation measures and LAWA policies/requirements.

Other Measures Considered

Section 4.4.2.3 above identifies the existing policies and Project features that have been incorporated into the unmitigated With Project GHG emission calculations. To determine if additional measures were applicable, LAWA compiled and reviewed a broad array of potential measures from various of sources, such as the FAA, the Airport Cooperative Research Program (ACRP), CARB, and SCAQMD. The review indicated that many of those potential measures are already being implemented at LAX under existing LAWA programs and requirements and/or would be incorporated into the proposed Project as Project features. Of the remaining measures, some were considered feasible to add as mitigation measures for the proposed Project, while others were determined to be not applicable or feasible to include as mitigation measures for the Project. **Appendix C.9** presents an overview of potential measures for the reduction of air pollutant emissions, including GHG emissions. The table indicates whether such measures are already being implemented at LAX, are proposed to be included in the Project as a design/operational feature or as a mitigation measure, or are considered to be not applicable to, or infeasible for, LAX and the proposed Project.

Quantification of GHG Emissions Reductions Associated with Mitigation

While all the mitigation measures presented above would serve to reduce construction- and operations-related GHG emissions associated with the proposed Project, only MM-T (ATMP)-1 provides a reasonable basis to estimate the amount of GHG emission reduction accomplished by the mitigation. The other mitigation measures are more general in nature or are dependent on specific design characteristics that would be defined during more detailed levels of planning. MM-T (ATMP)-1 requires a reduction in daily employee VMT by the equivalent of 16,450 VMT. Based on motor vehicle CO_2e emission factors applicable in 2028, this would result in a reduction of approximately 9,350 pounds per day of CO_2e emissions, or approximately 1,506 metric tons per year.

4.4.5.1.5 Significance of Impact After Mitigation

The proposed Project would generate GHG emissions directly and indirectly that would have a significant impact on the environment. Mitigation Measures MM-AQ/GHG (ATMP)-1 through MM-AQ/GHG (ATMP)-6, MM-GHG (ATMP)-1 through MM-GHG (ATMP)-5, and MM-T (ATMP)-1 would reduce GHG emissions associated with construction and operation of the proposed Project. However, the vast majority of GHG emissions associated with operation of the proposed Project in 2028 would occur with or without Project implementation and are from aircraft, which LAWA does not own and has no authority to control (i.e., Scope 3 GHG emissions). As described in Section 4.1.1, *Air Quality*, the USEPA establishes the overall policies and regulations for protecting air quality nationwide, which include setting standards for stationary (e.g., power plants, industrial boilers, incinerators) and mobile (e.g., motor vehicles, off/non-road vehicles, aircraft engines) sources of pollutant emissions, including GHG emissions. Section 233 of the federal Clean Air Act exclusively vests the authority to promulgate emission standards for aircraft and aircraft engines with the USEPA; states and other municipalities are preempted from adopting or enforcing any standard with respect to aircraft engine emissions unless such standard is identical to the USEPA's standards.

Implementation of the proposed mitigation measures would reduce Project-related GHG emissions, but not to a level that would be less than significant. No other feasible mitigation measures have been identified that would further reduce GHG impacts. Therefore, impacts associated with Project-related GHG emissions would remain ***significant and unavoidable***.

4.4.5.2 Impact 4.4-2

Summary Conclusion for Impact 4.4-2: Implementation of the proposed Project would conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs. This would be a *significant impact*. Even with mitigation, this would remain a *significant and unavoidable impact* for construction and operations.

4.4.5.2.1 Construction and Operations

Table 4.4-7 identifies the various plans, policies, and regulations described in Section 4.4.3.1 adopted for the purpose of reducing GHG emissions that are applicable to the proposed Project, summarizes the proposed Project's relationship to them, and identifies whether the proposed Project would conflict.

Table 4.4-7
Proposed Project Consistency with Plans, Policies, and Regulations Adopted to Reduce Greenhouse Gas Emissions

Regulatory Framework	Plan, Policy, or Regulation	Project's Relationship	Is the Project in Conflict with Plan, Policy, or Regulation?
State			
Title 24 Energy Standards	Ensures new and existing buildings achieve energy efficiency	All Title 24 energy requirements would be met. Additionally, the proposed Project would be designed and constructed in accordance with LAWA's Sustainable Design and Construction Policy, which requires new buildings to achieve LEED® Silver certification at a minimum. This requirement would apply to Concourse 0 and Terminal 9.	No
California Green Building Standards	Ensures new and existing buildings achieve various sustainable design parameters	The new buildings proposed as part of project would be constructed in accordance with the LAGBC, which is based on CALGreen.	No

Table 4.4-7
Proposed Project Consistency with Plans, Policies, and Regulations Adopted to Reduce Greenhouse Gas Emissions

Regulatory Framework	Plan, Policy, or Regulation	Project's Relationship	Is the Project in Conflict with Plan, Policy, or Regulation?
Executive Order S-3-05	Establishes statewide GHG reduction targets for California, including reducing GHG emissions to 1990 levels by 2020; and reducing GHG emissions to 80 percent below 1990 levels by 2050	GHG emissions in 2028 with Project implementation would be approximately 7.3 percent higher than baseline (2018) emissions. As shown in Table 4.4-6, the majority of this increase will occur with or without Project implementation. Further, as discussed in Section 4.4.5.1.3, LAWA does not have authority to regulate aircraft operations or emissions from aircraft engines. Finally, statewide GHG reduction targets are not directly applicable to individual projects. Nevertheless, the proposed Project's increase in GHG emissions above baseline levels may conflict with the State's ability to achieve statewide GHG reduction targets.	Yes
Executive Order B-30-15	Establishes a statewide GHG reduction target of 40 percent below 1990 levels by 2030	Same as above.	Yes
Executive Order B-55-18	Establishes a statewide GHG reduction target of carbon neutrality by 2045	Same as above.	Yes
2017 Climate Change Scoping Plan	Sets a statewide strategy to achieve a statewide GHG reduction target of 40 percent below 1990 levels by 2030, as required by SB 32	Same as above.	Yes
SB 375	Requires each MPO in the state to develop a Sustainable Communities Strategy through integrated land use and transportation planning in order to attain per capita GHG reduction targets for passenger vehicles set by CARB for 2020 and 2035	SCAG's RTP/SCS demonstrates how the region will reduce emissions from transportation sources to comply with SB 375. As discussed in Section 4.6, *Land Use and Planning*, activity levels are forecasted to be 127 MAP for LAX by 2045 whether or not the proposed Project is implemented. The forecasted activity levels are within the activity levels identified for LAX in the 2020-2045 RTP/SCS.	No
Zero-Emission Airport Shuttle Bus Regulation - CARB Rule	Requires fixed route airport shuttles serving the state's 13 largest airports to transition to 100 percent zero-emission vehicles (ZEVs) by 2035	The proposed Project would not directly affect the number or type of shuttle buses in operation at LAX.	No

Table 4.4-7
Proposed Project Consistency with Plans, Policies, and Regulations Adopted to Reduce Greenhouse Gas Emissions

Regulatory Framework	Plan, Policy, or Regulation	Project's Relationship	Is the Project in Conflict with Plan, Policy, or Regulation?
Regional			
Southern California Association of Governments (SCAG) RTP/SCS	Identifies land use and transportation strategies to increase mobility options and achieve a more sustainable growth pattern	As indicated above relative to SB 375, emissions from forecasted activity levels associated with future growth at LAX, of which the proposed Project is a part, are accounted for in the Proposed Final 2020-2045 RTP/SCS.	No
Local			
Sustainable City pLAn/Green New Deal	Original plan set a 20-year vision of milestones to transform Los Angeles, including commitments for the City to become a national leader in carbon reduction and climate action by eliminating coal from the City's energy mix, prioritizing energy efficiency, and inspiring other cities to take similar action. The updated plan (Green New Deal) sets targets of reducing municipal GHG emissions below 2008 levels by 55 percent by 2025 and 65 percent by 2035, reaching carbon neutral by 2045.	The proposed Project would implement sustainability and energy reducing practices, including the requirement that new buildings achieve LEED® Silver certification at a minimum. However, the proposed Project's net increase in GHG emissions above baseline levels would not be consistent with the City's ability to achieve the GHG reduction targets for 2025, 2035, and 2045.	Yes
Resilient Los Angeles	Addresses a range of challenges facing Los Angeles, including meeting or exceeding climate resilience outcomes. Actions identified in the plan include accelerating reductions in GHG emissions and leveraging the modernization at LAX to incorporate sustainability and resilience measures.	The proposed Project is consistent with the action of modernizing LAX to incorporate sustainability and resilience measures. Moreover, although the proposed Project would result in a net increase in GHG emissions above baseline levels, a number of measures would be implemented as part of the Project in accordance with existing LAWA programs that would reduce GHG emissions, including the LAWA Alternative Fuel Vehicle Policy, compliance with USEPA 2010 emissions standards for trucks, and use of USEPA Tier 4(final) off-road diesel-powered equipment, LAWA's existing GSE policy, and gate electrification. In addition, as described in Section 4.8, *Transportation,* VMT per employee with implementation of the proposed Project would be more efficient than under existing (2019) conditions, resulting in lower GHG emissions per employee.	No

Table 4.4-7
Proposed Project Consistency with Plans, Policies, and Regulations Adopted to Reduce Greenhouse Gas Emissions

Regulatory Framework	Plan, Policy, or Regulation	Project's Relationship	Is the Project in Conflict with Plan, Policy, or Regulation?
Executive Directive No. 25	Accelerates the Green New Deal and adopts new steps and accountability measures to achieve the City's climate objectives, including measures aimed at reducing building energy use, designing carbon neutral buildings, and reducing fossil fuel use through transportation improvements	The proposed Project would implement sustainability and energy reducing practices, including the requirement that Concourse 0 and Terminal 9 achieve LEED® Silver certification at a minimum.	No
City of Los Angeles Green Building Code (LAGBC)	Incorporates portions of the CALGreen Code and adds other conservation-related measures for residential and non-residential development	The proposed Project would be constructed in accordance with applicable requirements of the LAGBC.	No
LAWA Sustainability Plans and Guidelines	LAWA's Sustainable Design and Construction Policy requires new buildings to achieve LEED® Silver certification at a minimum and requires projects such as taxiways to adhere to LAWA's Sustainable Design and Construction Requirements. LAWA has also adopted an internal commitment to reduce GHG emissions from LAWA owned and operated sources 45 percent below 1990 levels by 2025, 60 percent by 2035, and 80 percent by 2050. LAWA's SAP increases these goals to a 55 percent reduction below 1990 levels by 2025, 65 percent reduction by 2035, and carbon neutrality by 2045. In December 2019, LAWA entered a voluntary MOU with the SCAQMD to reduce air pollutant emissions from non-aircraft sources at LAX. Measures included in the MOU are the GSE Emission Reduction Policy, the LAX Alternatives Fuel Vehicle Incentive Program, and the Zero-Emission Bus Program, which are effective through 2032.	Concourse 0 and Terminal 9 would achieve LEED® Silver certification at a minimum, and the proposed airfield improvements would be constructed in accordance with LAWA's Sustainable Design and Construction Requirements. The new gates at Concourse 0 and Terminal 9 would have pre-conditioned air and gate power. The proposed Project would implement the measures included in the SCAQMD MOU and would not hinder its requirements.	No

Source: CDM Smith, August 2020.

As shown in Table 4.4-7, implementation of the proposed Project would have no conflicts with many of the plans, policies, and regulations that have been adopted for the purpose of reducing GHG emissions. However, the Project would conflict with some plans, policies, and regulations, including Executive Orders S-3-05, B-30-15, and B-55-18; 2017 Climate Change Scoping Plan and the City of Los Angeles' Sustainable City pLAn/Green New Deal. These plans and policies each establish numeric targets for reducing future GHG emissions below 1990 levels.

As discussed under Impact 4.4-1 above, GHG emissions at LAX in 2028 would be greater than the GHG emissions in 2018, which themselves are greater than 1990 GHG emissions levels. As shown in Table 4.4-5, the majority of the increase in GHG emissions at LAX in 2028 compared to baseline conditions is attributable to future growth projected to occur at LAX irrespective of the proposed Project. Further, as discussed in Section 4.4.5.1.3, LAWA does not have authority to regulate aircraft operations or emissions from aircraft engines. Design changes, including the proposed airfield improvements, terminal gate configurations, and the substantial decommissioning of the West Remote Gates with implementation of the proposed Project, would result in decreased GHG emissions. The increased aircraft emissions would be partially offset by decreases in automobile, parking, and GSE emissions. The proposed Project would also add construction-related GHG emissions, as well as stationary source emissions attributable to Concourse 0 and Terminal 9, which would increase emissions compared to 2018 baseline conditions. An increase in APU emissions would also occur because total aircraft operations would increase between 2018 and 2028. It is anticipated, however, that future aircraft-related GHG emissions will be lower than currently projected based on the continuing trend of improvements in aircraft engine design and lighter, more fuel-efficient aircraft, which would serve to reduce GHG emissions, even though such improvements are beyond the scope of the proposed Project and are not within the control of LAWA. In addition, GSE emissions may be further reduced if CARB adopts a zero-emission airport GSE measure.

Moreover, future growth in activity at LAX is acknowledged and included in SCAG's Proposed Final 2020-2045 RTP/SCS. Notwithstanding these considerations, the Project would nevertheless increase GHG emissions over baseline levels. Therefore, the Project's conflicts with some plans, policies, and regulations that have been adopted for the purpose of reducing GHG emissions would be a ***significant impact***.

4.4.5.2.2 Mitigation Measures

Implementation of Mitigation Measures MM-AQ/GHG (ATMP)-1 through MM-AQ/GHG (ATMP)-6, MM-GHG (ATMP)-1 through MM-GHG (ATMP)-5, and MM-T (ATMP)-1, presented above in the discussion of Impact 4.4-1, would reduce GHG emissions associated with the proposed Project. The reduction in emissions resulting from implementing this mitigation measure would reduce the severity of Project-related conflicts with certain applicable plans, policies, and regulations adopted for the purpose of reducing emissions of GHG.

4.4.5.2.3 Significance of Impact After Mitigation

Implementation of Mitigation Measures MM-AQ/GHG (ATMP)-1 through MM-AQ/GHG (ATMP)-6, MM-GHG (ATMP)-1 through MM-GHG (ATMP)-5, and MM-T (ATMP)-1, presented above in the discussion of Impact 4.4-1, would reduce GHG emissions associated with construction and operation of the proposed Project. However, as noted in that discussion, even with implementation of these mitigation measure, Project-related GHG emissions would be ***significant and unavoidable***. The reduction in emissions resulting from Mitigation Measures MM-AQ/GHG (ATMP)-1 through MM-AQ/GHG (ATMP)-6, MM-GHG (ATMP)-1 through MM-GHG (ATMP)-5, and MM-T (ATMP)-1 would reduce the severity of Project-related conflicts with certain applicable plans, policies, and regulations adopted for the purpose of reducing emissions of GHG, but would not eliminate these conflicts. Therefore, impacts of the proposed Project with respect to applicable plans, policies, and regulations adopted for the purpose of reducing the emissions of GHGs would remain ***significant and unavoidable***.

4.4.6 Cumulative Impacts

The GHG impacts addressed in this section are treated exclusively as cumulative impacts; there are no non-cumulative GHG emission impacts from a climate change perspective. In its notice of proposed amendments to the CEQA Guidelines pertaining to GHG, the California Natural Resources Agency (CNRA) noted that the impacts of GHG emissions should be considered in the context of a cumulative impact, rather than a project impact. The public notice states:[116]

> "While the Proposed Amendments do not foreclose the possibility that a single project may result in greenhouse gas emissions with a direct impact on the environment, the evidence before [CNRA] indicates that in most cases, the impact will be cumulative. Therefore, the Proposed Amendments emphasize that the analysis of greenhouse gas emissions should center on whether a project's incremental contribution of greenhouse gas emissions is cumulatively considerable."

It is the accumulation of GHGs in the atmosphere that may result in global climate change. Climate change impacts are cumulative in nature and, thus, no typical single project would result in emissions of such a magnitude that it, in and of itself, would be significant on a project basis. A typical single project's GHG emissions will be small relative to total global or even statewide GHG emissions. The analysis of the significance of potential impacts from GHG emissions related to a single project is already representative of the long-term impacts on a cumulative basis. As such, the assessment of significance under CEQA is based on a determination of whether the incremental GHG emissions from the proposed Project represent a cumulatively considerable contribution to global climate change impacts. (See State CEQA Guidelines Section 15064.4(b).) As indicated in Section 4.4.5, implementation of the proposed Project would result in a significant and unavoidable impact related to GHG emissions; hence, the proposed Project's incremental contribution of GHG emissions, both before and after mitigation, is considered to be ***cumulatively considerable***.

4.4.7 Summary of Impact Determinations

Table 4.4-8 summarizes the impact determinations of the proposed Project related to GHG emissions, as described above in Sections 4.4.5 and 4.4.6. Impact determinations are based on the significance criteria presented in Section 4.4.4, and the information and data sources cited throughout Section 4.4.

[116] California Natural Resources Agency, *Notice of Public Hearings and Notice of Proposed Amendment of Regulations Implementing the California Environmental Quality Act*, 2009. Available: https://resources.ca.gov/CNRALegacyFiles/ceqa/docs/Notice_of_Proposed_Action.pdf.

Table 4.4-8
Summary of Impacts and Mitigation Measures Associated with the Proposed Project Related to Greenhouse Gas Emissions

Environmental Impacts	Impact Determination	Mitigation Measures	Level of Significance After Mitigation
Impact 4.4-1: Construction and operation of the proposed Project would generate GHGs, directly and indirectly, that may have a significant impact on the environment. This would be a ***significant and unavoidable impact*** for construction and operations.	Construction and operations combined: Significant	Construction: MM-AQ/GHG (ATMP)-1. Rock Crushing Operations. MM-AQ/GHG (ATMP)-2. Use of Renewable Diesel Fuel. MM-GHG (ATMP)-1. Demolition Waste. MM-C (ATMP)-1. Construction Mitigation Oversight. Operations: MM-AQ/GHG (ATMP)-3. Parking Cool Roof. MM-AQ/GHG (ATMP)-4. EV Charging Infrastructure. MM-AQ/GHG (ATMP)-5. Electric Vehicle Purchasing. MM-AQ/GHG (ATMP)-6. Solar Energy Technology. MM-GHG (ATMP)-2. Organic Waste Collection and Diversion. MM-GHG (ATMP)-3. Green Procurement. MM-GHG (ATMP)-4. Enhanced Recycling. MM-GHG (ATMP)-5. Landscaping Water. MM-T (ATMP)-1. Vehicle Miles Traveled (VMT) Reduction Program.	Construction and operations combined: Significant and Unavoidable

Table 4.4-8
Summary of Impacts and Mitigation Measures Associated with the Proposed Project Related to Greenhouse Gas Emissions

Environmental Impacts	Impact Determination	Mitigation Measures	Level of Significance After Mitigation
Impact 4.4-2: Construction and operation of the proposed Project would conflict with applicable plans, policies, or regulations adopted for the purpose of reducing the emissions of GHGs. This would be a ***significant and unavoidable impact*** for construction and operations.	Construction and operations combined: Significant	Construction: MM-AQ/GHG (ATMP)-1. Rock Crushing Operations. MM-AQ/GHG (ATMP)-2. Use of Renewable Diesel Fuel. MM-GHG (ATMP)-1. Demolition Waste. MM-C (ATMP)-1. Construction Mitigation Oversight. Operations: MM-AQ/GHG (ATMP)-3. Parking Cool Roof. MM-AQ/GHG (ATMP)-4. EV Charging Infrastructure. MM-AQ/GHG (ATMP)-5. Electric Vehicle Purchasing. MM-AQ/GHG (ATMP)-6. Solar Energy Technology. MM-GHG (ATMP)-2. Organic Waste Collection and Diversion. MM-GHG (ATMP)-3. Green Procurement. MM-GHG (ATMP)-4. Enhanced Recycling. MM-GHG (ATMP)-5. Landscaping Water. MM-T (ATMP)-1. Vehicle Miles Traveled (VMT) Reduction Program.	Construction and operations combined: Significant and Unavoidable

Table 4.4-8
Summary of Impacts and Mitigation Measures Associated with the Proposed Project Related to Greenhouse Gas Emissions

Environmental Impacts	Impact Determination	Mitigation Measures	Level of Significance After Mitigation
Cumulative impacts: Construction and operation of the proposed Project would result in an incremental increase in GHG emissions. This would be a ***cumulatively considerable*** contribution for construction and operations.	Construction and operations combined: Cumulatively considerable	Construction: MM-AQ/GHG (ATMP)-1. Rock Crushing Operations. MM-AQ/GHG (ATMP)-2. Use of Renewable Diesel Fuel. MM-GHG (ATMP)-1. Demolition Waste. MM-C (ATMP)-1. Construction Mitigation Oversight. Operations: MM-AQ/GHG (ATMP)-3. Parking Cool Roof. MM-AQ/GHG (ATMP)-4. EV Charging Infrastructure. MM-AQ/GHG (ATMP)-5. Electric Vehicle Purchasing. MM-AQ/GHG (ATMP)-6. Solar Energy Technology. MM-GHG (ATMP)-2. Organic Waste Collection and Diversion. MM-GHG (ATMP)-3. Green Procurement. MM-GHG (ATMP)-4. Enhanced Recycling. MM-GHG (ATMP)-5. Landscaping Water. MM-T (ATMP)-1. Vehicle Miles Traveled (VMT) Reduction Program.	Construction and operations combined: Cumulatively considerable

4.5 Hazardous Materials

4.5.1 Introduction

This section addresses whether the proposed Project would result in impacts related to hazardous materials and whether there would be the potential for the proposed Project to affect ongoing soil and groundwater contamination characterization, monitoring, and/or remediation activities, and the associated potential of hazardous materials to result in significant impacts to the public or the environment.

Prior to the preparation of this EIR, an Initial Study (included as **Appendix A** of this EIR) was prepared using the CEQA Environmental Checklist Form to assess potential environmental impacts associated with hazardous materials. For four of these screening criteria and portions of two screening criteria, the Initial Study found that the proposed Project would result in either "No Impact" or a "Less Than Significant Impact" and, thus, no further analysis of these topics in an EIR was required. Based on the Initial Study screening criteria related to hazards and hazardous materials, the following potential impacts do not require any additional analysis in this EIR:

- Potential impacts related to hazards to the public or the environment through the routine transport, use, or disposal of hazardous materials (State CEQA Guidelines Appendix G, Question IX.a) were evaluated and determined to be less than significant in the Initial Study. The proposed Project would not result in any substantial changes to the routine use of hazardous materials. Compliance with existing federal, state, and local regulations and routine precautions would reduce the potential for accidental releases of a hazardous material to occur and would minimize the impact of an accident should one occur. As such, the proposed Project would not create a significant hazard to the public or environment through the routine transport, use, or disposal of hazardous materials and no further evaluation in this EIR is required.
- In the Initial Study, the potential for the proposed Project to create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment (State CEQA Guidelines Appendix G, Question IX.b) was determined to consist of three types of risks: (1) inadvertent releases of hazardous or regulated materials during construction or operation; (2) releases of hazardous building materials (such as asbestos-containing materials and lead) that may be present in buildings to be demolished or modified; and (3) interference with ongoing soil and groundwater remediation activities that would result in a hazard to the public or environment. Potential impacts related to inadvertent releases of hazardous materials or hazardous building materials during demolition, construction, or operation were evaluated and determined to be less than significant in the Initial Study. Compliance with existing federal, state, and local regulations governing the treatment and removal of hazardous building materials, occupational safety and health, and the handling, storage, transport, and disposal of hazardous materials; use of construction Best Management Practices (BMPs) implemented as part of a construction Stormwater Pollution Prevention Plan (SWPPP); and compliance with LAWA's Design and Construction Handbook,[1] which mandates compliance with all requirements of environmental regulatory agencies, would minimize potential adverse effects to the general public and environment from inadvertent releases during demolition, construction, and operation of the proposed Project. In addition, if contaminated soils or groundwater are encountered during

[1] City of Los Angeles, Los Angeles World Airports, *2020 Design and Construction Handbook (DCH), Version 1.0,* June 30, 2020. Available: https://www.lawa.org/en/lawa-businesses/lawa-documents-and-guidelines/lawa-design-and-construction-handbook.

construction, compliance with federal, state, and local regulations and regulatory oversight by agencies, including the Los Angeles Fire Department (LAFD) and the Los Angeles Regional Water Quality Control Board (RWQCB), would minimize potential adverse effects to the general public and the environment. As such, construction and operation of the proposed Project would not create a significant hazard to the public or environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment specific to inadvertent releases, including the release of hazardous building materials, and no further evaluation of these topics is required in this EIR. (Potential impacts due to releases of hazardous materials related to interference with the remediation of existing soil and/or groundwater contamination were determined to be possible; these impacts are evaluated in this section.)

- Potential impacts associated with hazardous emissions or the handling of hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school (State CEQA Guidelines Appendix G, Question IX.c) were evaluated and determined to have no impact in the Initial Study. There are no schools located or proposed within one-quarter mile of the Project site. (As noted in Section 2.2.2, *Local Setting and Land Uses*, in Chapter 2, *Description of the Proposed Project*, the Los Angeles Community College District offers a periodic course at a warehouse facility that is located close to the proposed landside improvements; however, the facility is not a school.) Therefore, no impacts related to hazardous emissions or the handling of hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school would occur with the implementation of the proposed Project and no further evaluation in this EIR is required.
- Potential impacts related to safety hazards for people residing or working in the Project area (State CEQA Guidelines Appendix G, Question IX.e), which itself is located within an airport land use plan, were evaluated and determined to have no impact in the Initial Study.[2] Numerous safeguards are required by law to minimize the potential for, and the effects from, an accident if one were to occur. Federal Aviation Administration (FAA) Airport Design Standards establish, among other things, land use-related guidelines to protect people and property on the ground, including establishment of safety zones that keep areas near runways free of objects that could interfere with aviation activities. Section 12.50 of the Comprehensive Zoning Plan of the City of Los Angeles regulates building height limits and land uses within the Hazard Area established by the Planning and Zoning Code to protect aircraft approaching and departing from LAX from obstacles. In addition to the many safeguards required by law, LAWA and tenants of LAX maintain emergency response and evacuation plans that also serve to minimize the potential for and the effects of an accident. All proposed Project buildings/structures would be designed in accordance with FAA's Airport Design Standards to ensure that the buildings/structures do not interfere with Airport Traffic Control Tower (ATCT) activities or affect airfield safety. Construction activities would be coordinated with FAA through the use of Form FAA 7460-1 (Notice of Proposed Construction or Alteration), which requires that the developer of any project on or near airports must provide notice to FAA so that FAA can conduct an analysis of any potential hazards to air navigation. As discussed in Section 2.4.3.2, *Relationship to Airspace/Airfield Surfaces*, in Chapter 2, *Description of the Proposed Project*, the proposed airfield, terminal, and landside

[2] Initial Study Checklist Item IX.e. evaluates safety hazards and excessive noise for projects within an airport land use plan. The Initial Study found that the proposed Project would not result in a safety hazard, but that construction and operation of the proposed Project may generate noise levels in excess of applicable federal, state and/or local noise standards. Please see Section 4.7, *Noise*, for a discussion of the potential noise impacts of the proposed Project.

(roadway) improvements would not penetrate Part 77 Surfaces.[3] Further, as described in Chapter 2, *Description of the Proposed Project*, the proposed Project includes a number of airfield elements that would enhance aviation safety within the north airfield, in particular, modifications to the Runway 6L-24R exits. By improving the north airfield, and adhering to FAA Airport Design Standards in the design of new buildings/structures, the proposed Project would not result in a safety hazard for people residing or working in the Project area and no further evaluation in this EIR is required.

- Potential impacts related to impairing implementation of, or causing physical interference with, an adopted emergency response plan or emergency evacuation plan (State CEQA Guidelines Appendix G, Question IX.f) were evaluated and determined to have no impact in the Initial Study. LAWA and tenants of LAX maintain emergency response plans and emergency evacuation plans to minimize the potential for and the effects of an accident, should one occur. Construction activities at the proposed Project site and staging areas would comply with LAWA and FAA guidelines and procedures that are in place to limit the impacts of construction at the airport, including the potential to affect emergency response. In addition, LAWA uses Intelligent Transportation Systems (ITS), including changeable message signs, to notify drivers of construction-related activities and roadway conditions in and around the Central Terminal Area (CTA), which improves traffic flows at LAX. Further, LAWA would coordinate with the LAFD and Los Angeles World Airports Police Division (LAWA PD) regarding emergency access and other design needs to ensure that emergency service levels are maintained during construction. The LAWA Coordination and Logistics Management (CALM) Team would ensure that occupancy and operation of adjacent and surrounding facilities would be maintained throughout demolition and construction activities. In addition, in accordance with standard LAWA practices, all emergency access routes in the vicinity of the Project site and staging areas would be kept clear and unobstructed at all times in accordance with FAA, State Fire Marshal, and Los Angeles Fire Code regulations. Therefore, implementation of the proposed Project would have no impact related to emergency response plans or emergency evacuation plans and no further evaluation in this EIR is required.
- Potential impacts related to exposure of people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires (State CEQA Guidelines Appendix G, Question IX.g) were evaluated and determined to have no impact in the Initial Study. The Project site is located within a developed airport and surrounded by airport uses, urbanized areas, and the Los Angeles/El Segundo Dunes. There are no fire hazard areas containing flammable brush or grass on the Project site. Furthermore, the Project site is not within a City of Los Angeles Wildfire Hazard Area, as delineated in the Safety Element of the General Plan.[4] Therefore, implementation of the proposed Project would not result in the exposure of people or structures to hazards associated with wildland fires and no further evaluation in this EIR is required.

[3] Federal Aviation Regulation (FAR) Part 77, *Safe, Efficient Use and Preservation of the Navigable Airspace*, serves as a means of identifying the airspace required for safe operation of aircraft at or near an airport. This regulation establishes imaginary surfaces extending outward from the runways within which it is required that the FAA be notified of any proposed development or structural changes that would obstruct the path of operating aircraft. These "imaginary surfaces" are three dimensional, starting at ground level around each runway and sloping upward and outward at various angles for various distances. The standards that define these imaginary surfaces provide guidance to state and local governments in their efforts to control land use around airports so as to protect aircraft in flight and people on the ground.

[4] City of Los Angeles, Department of City Planning, *Safety Element of the City of Los Angeles General Plan*, Exhibit D, Selected Wildfire Hazard Areas In the City of Los Angeles, April 1996.

The Initial Study found that implementation of the proposed Project has the potential to result in a significant hazard to the public or environment as a result of being on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. There is a potential of a significant hazard to the public or environment associated with a reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment associated with existing soil and/or groundwater contamination remediation activities in areas that would be developed under the proposed Project. As such, these potential impacts, as identified in the Initial Study, are evaluated below.

4.5.2 Methodology

The study area for the hazardous materials analysis includes the areas that could be affected by construction activities, in particular, areas where proposed airfield, Concourse 0, Terminal 9, and roadway improvements would occur. The general Project study area is identified in Figure 2-3 in Chapter 2, *Description of the Proposed Project*. The specific study area for the analysis of hazardous materials consists of the locations of individual Project improvements; these specific locations are shown in Figure 2-1. To analyze the potential impacts of the proposed Project on ongoing characterization, remediation, and monitoring activities, the study area was reviewed to identify existing known contaminated soil and/or groundwater sites and related cleanup activities. Numerous lists of hazardous waste sites and other sources were used in this analysis, as identified below. The locations identified from these lists and other sources were mapped within the hazardous materials study area to determine whether the proposed Project would overlap with such hazardous sites. This process identified areas where construction activities would have the potential to interfere with the cleanup of sites that are currently under investigation, undergoing remediation, or that have remediation planned in the future. These impacts are typically construction-related because the construction phase requires demolition, grading, and excavation, which can disturb monitoring and extraction wells and related infrastructure.

Data regarding areas of known contamination were obtained from a variety of sources. As required by Public Resources Code Section 21092.6, a search of database lists compiled pursuant to Section 65962.5 of the California Government Code was conducted to determine if regulatory agencies have identified sites within the hazardous materials study area as having been contaminated by hazardous materials or substances releases. A government records search was performed by Environmental Data Resources Inc. (EDR) in June 2019 (see **Appendix E**) to identify potential areas of groundwater and/or soil contamination within the hazardous materials study area. The records search included numerous federal, state, and local government databases, such as those identifying leaking underground storage tanks (USTs), sites with known hazardous materials or substances releases, and sites with extensive contamination and ongoing remediation (e.g., National Priority List sites). A complete list of databases included in the records search is provided at the beginning of **Appendix E**.

Site contamination information from the EDR report was supplemented by reviewing technical reports and studies on GeoTracker[5] and EnviroStor[6] online databases, as well as information from LAWA personnel. Additional databases that comprise the "Cortese List" (list of designated hazardous waste sites), as currently defined by California Environmental Protection Agency (CalEPA), were also reviewed.

[5] GeoTracker is the State Water Resources Control Board's (SWRCB's) data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater. GeoTracker contains records for sites that require cleanup, such as leaking UST sites. GeoTracker portals retrieve records and view integrated data sets from multiple SWRCB programs and other agencies. Users can view these data through a Google Maps GIS interface. The GeoTracker website is online at https://geotracker.waterboards.ca.gov/.

[6] EnviroStor is the California Department of Toxic Substances Control's (DTSC's) data management system for tracking cleanup, permitting, enforcement, and investigation efforts at hazardous waste facilities and sites with known contamination or sites where there may be reasons to investigate further. The EnvirStor website is online at https://www.envirostor.dtsc.ca.gov/public/.

4.5.3 Existing Conditions

4.5.3.1 Regulatory Setting

There are numerous federal, state, and local laws and regulations governing the use, storage, transport, and disposal of hazardous materials; remediation of environmental contamination; public notification; emergency response; and other topics. Many of these laws and regulations pertain to subjects that are not evaluated in the Draft EIR (see Section 4.5.1). The following presents the relevant regulatory framework, laws, ordinances, and regulations that are applicable to the analysis of the potential for the proposed Project to affect ongoing soil and groundwater contamination characterization, monitoring, and/or remediation activities. Agencies with jurisdiction over these activities are also identified. Laws and regulations governing toxic air contaminants are discussed is Section 4.1.2, *Human Health Risk*.

4.5.3.1.1 Federal

Resource Conservation and Recovery Act (RCRA)

RCRA establishes national goals to protect human health and the environment from the potential hazards of waste disposal to ensure that wastes are managed in an environmentally-sound manner. RCRA Subtitle C (42 USC Section 6901 et seq.) is intended to proactively manage hazardous waste and to minimize and avoid hazardous waste contamination. RCRA Subtitle C addresses hazardous waste from cradle-to-grave, regulating the generation, transport, storage, treatment, and disposal of hazardous waste. RCRA Subtitle I, the Hazardous and Solid Waste Amendments (HSWA) of 1984, expanded and clarified RCRA Subtitle C. The U.S. Environmental Protection Agency (USEPA) administers RCRA Subtitle C pursuant to regulations found at 40 CFR Section 260 et seq. and has delegated RCRA Subtitle C implementation and enforcement within California to the State.

To protect groundwater, RCRA Subtitle I (42 USC Section 6991 et seq., 40 CFR Section 280 et seq.) establishes design, construction, and operational standards to prevent chemical releases from USTs. RCRA Subtitle I regulates USTs containing hazardous substances or petroleum. USEPA sets standards governing tank construction based on whether the tank is new or whether an existing tank is upgraded. USEPA also imposes operation and maintenance procedures for UST owners and operators, and establishes reporting requirements from regulated tanks that release substances into the environment.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

CERCLA, also known as Superfund, provides a Federal "Superfund" to clean up uncontrolled or abandoned hazardous waste sites, as well as accidents, spills, and other emergency releases of pollutants and contaminants into the environment. CERCLA establishes procedures to identify and clean up chemically contaminated sites posing a significant environmental health threat (42 USC 9601 et seq.). The program also establishes a liability process that governs which parties are responsible for cleanup costs. Under CERCLA, USEPA is authorized to clean up hazardous waste contaminated sites and seek reimbursement from liable individuals for expenses incurred during the cleanup process (42 USC Section 9606(a)). USEPA administers CERCLA (40 CFR Section 300 et seq.). CERCLA was reauthorized in 1986 by the Superfund Amendments and Reauthorization Act.

Executive Order 12088 - Federal Compliance with Pollution Control

Executive Order 12088, *Federal Compliance with Pollution Control*, mandates that necessary actions be taken to prevent and control environmental pollution when federal activities or federal facilities are involved. As implementation of the proposed Project would require various federal approvals, Executive Order 12088 would apply to the proposed Project.

4.5.3.1.2 State

California Government Code Section 65962.5

The provisions in Government Code Section 65962.5 are commonly referred to as the "Cortese List" (after the Legislator who authored the legislation that enacted it).[7] Section 65962.5 requires the CalEPA to compile and maintain a list of potential hazardous materials release sites located throughout California. CalEPA has identified the data resources below that provide information regarding the facilities or sites identified as meeting the "Cortese List" requirements:[8]

- List of Hazardous Waste and Substances sites from the California Department of Toxic Substances Control's (DTSC's) EnviroStor database
- List of Open Active Leaking Underground Storage Tank Sites from the SWRCB's GeoTracker database
- List of solid waste disposal sites identified by the SWRCB with waste constituents above hazardous waste levels outside the waste management unit
- List of "active" Cease and Desist Orders (CDO) and Cleanup and Abatement Orders (CAO) from the SWRCB
- List of hazardous waste facilities subject to corrective action pursuant to Section 25187.5 of the Health and Safety Code, identified by DTSC

Hazardous Substance Account Act

The Hazardous Substance Account Act (HSAA; Health and Safety Code Section 25300 et seq.) establishes a state Superfund program to clean up contaminated sites not listed on the National Priorities List. The HSAA authorizes DTSC to initiate remedial and removal actions, and to enter into enforceable agreements with potentially responsible parties to investigate and remediate contamination.

4.5.3.1.3 Regional and Local

South Coast Air Quality Management District Rule 1166

Remediation of contamination has the potential to expose workers to hazardous materials or substances. The South Coast Air Quality Management District (SCAQMD) regulates emissions from soil remediation activities through Rule 1166, *Volatile Organic Compound Emissions from Decontamination of Soil*. This rule requires development and approval of a mitigation plan, monitoring of volatile organic compound (VOC) concentrations, and implementation of the mitigation plan if VOC-contaminated soil is detected.

LAWA's Design and Construction Handbook

LAWA's Design and Construction Handbook[9] (Section 02 00 00 Existing Conditions) includes procedures for addressing soil and groundwater contamination encountered during construction. In accordance with these procedures, facilities are required to be tested to satisfy the requirements of the LAFD, Los Angeles County Fire Department, and the Los Angeles RWQCB to determine if there is contamination of the soil and/or groundwater. If contamination is identified, the project proponent must conduct sampling to determine the extent of contamination, develop a remedy or solution to address the contamination, and develop plans for transporting and disposing of hazardous materials within 90 days in accordance with all

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7 California Environmental Protection Agency, *Background and History [Government Code Section 65962.5]*. Available: https://calepa.ca.gov/sitecleanup/corteselist/background/, accessed October 22, 2019.

8 California Environmental Protection Agency, *Cortese List Data Resources*. Available: https://calepa.ca.gov/SiteCleanup/CorteseList/, accessed October 22, 2019.

9 City of Los Angeles, Los Angeles World Airports, *2020 Design and Construction Handbook (DCH), Version 1.0,* June 30, 2020. Available: https://www.lawa.org/en/lawa-businesses/lawa-documents-and-guidelines/lawa-design-and-construction-handbook.

applicable laws and ordinances and to the satisfaction of LAWA, LAFD, Los Angeles County Fire Department, and the Los Angeles RWQCB. Specific requirements are outlined in the Design and Construction Handbook that pertain to the investigation, management, removal, transport, and disposal of hazardous materials/wastes encountered during construction activities.

LAX Plan

The LAX Plan,[10] an element of the City of Los Angeles General Plan, provides goals, objectives, policies, and programs that establish a framework for the development of facilities for movement and processing of passengers and cargo at LAX. The LAX Plan is intended to promote an arrangement of LAX uses that encourages and contributes to the modernization of LAX in an orderly and flexible manner within the context of the City of Los Angeles region.

Section 3.8 of the LAX Plan includes the following policy pertaining to hazardous materials:

- **P1:** Implement a program for handling of contaminated materials encountered during construction.

As noted above, LAWA's Design and Construction Handbook identifies procedures for evaluating, handling, and remediating, if necessary, contaminated materials encountered during construction.

4.5.3.1.4 Agencies with Authority Over Remediation of Contaminated Sites

As described in Section 4.5.3.2, *Environmental Setting*, past activities on the airport have resulted in contamination of soil and groundwater by hazardous materials or substances. Releases of hazardous materials are subject to a complex set of reporting requirements, including notification to LAFD and the California Office of Emergency Services (OES). Remediation of contamination is subject to stringent oversight by federal, state, county, and/or city agencies, depending on the nature of contamination. (There are no contaminated sites at or near LAX that are currently subject to federal oversight.) The LAFD oversees contamination resulting from leaking USTs. The Los Angeles RWQCB has the authority to require the remediation of sites where groundwater quality may be degraded by hazardous materials or substances releases from USTs or other sources. These agencies require that remediation continue until regulatory requirements are met and closure is granted. Information about each of these agencies is provided below.

Los Angeles Fire Department

LAFD administers the UST Program for the City of Los Angeles under which it regulates the construction, operation, repair and removals of USTs. When warranted, LAFD requires soil sampling and may initiate a site assessment process. LAFD is responsible for ensuring the cleanup and remediation of contaminated soil associated with USTs. Sites with groundwater contamination are referred to the Los Angeles RWQCB.

State Water Resources Control Board/Regional Water Quality Control Boards

The SWRCB operates under the authority of the CalEPA with a mission to preserve, enhance, and restore the quality of California's water resources and drinking water for the protection of the environment, public health, and all beneficial uses. There are nine RWQCBs that develop and enforce water quality objectives and implementation plans that will best protect the beneficial uses of the State's waters. The RWQCBs have the authority to require the remediation of sites where groundwater quality may be degraded by hazardous materials or substances releases from USTs or other sources. The Project area is within the jurisdiction of the Los Angeles RWQCB (Region 4). The Los Angeles RWQCB issued Order

[10] City of Los Angeles, Department of City Planning, *Los Angeles International Airport - LAX Plan*, adopted December 14, 2004, last amended June 7, 2017. Available: https://www.lawa.org/-/media/lawa-web/lawa-our-lax/plan-and-ordiance/2017-lax-plan.ashx?la=en&hash=A56B9B036C9CC63428A4AC5DC0E910992C1B0F53.\.

No. R4-2007-0019 which provides General Waste Discharge Requirements (WDRs) relative to the groundwater remediation at petroleum hydrocarbon fuel and/or VOC impacted sites. The Order identifies a list of materials that can be used for in-situ remediation zone treatment purposes.

4.5.3.2 Environmental Setting

4.5.3.2.1 Hazardous Materials Study Area

The proposed Project improvement areas, which constitute the hazardous materials study area, are located within the northern and eastern portions of LAX, as illustrated in Figure 2-1 in Chapter 2, *Description of the Proposed Project*. The study area has irregular boundaries, as illustrated in Figure 2-3 in Chapter 2, *Description of the Proposed Project*. The boundaries of the northern portion of the study area correspond to the area that constitutes the north airfield (i.e., Pershing Drive on the west, Runway 6L-24R on the north, Sepulveda Boulevard on the east, and Taxiway D and the area of its proposed extension on the south). The boundaries of the southern portion of the study area include the CTA (i.e., Terminals 1 and 8) to the west, 96th Street to the north, the future "A" Street and Aviation Boulevard to the east, and Taxiway B to the south.

These areas consist of highly-developed land within and adjacent to a busy international airport. The proposed airfield improvements are situated within a portion of the airport that includes paved airfield areas, airfield access roadways, remote gates, and other aviation-related uses, such as maintenance facilities and fuel storage facilities. The Concourse 0 site is currently occupied by LAX-it, a temporary passenger pickup area for taxis and transportation network companies (TNCs) like Uber and Lyft. The site also houses a groundwater remediation system and associated monitoring wells and equipment to address past contamination beneath the site (described later in this section). The Terminal 9 site encompasses existing cargo and maintenance facilities, aircraft parking spaces, the LAX Records Retention Building, and an American Eagle commuter terminal. The proposed landside improvements would be located in proximity to several hotels (Hyatt Regency Los Angeles, H Hotel/Homewood Suites, Courtyard by Marriott), an office building, surface and structured parking facilities, and the Los Angeles Community College District property. Also within the vicinity of the Project site is the entrance to LAX, located at World Way and Sepulveda Boulevard.

Groundwater beneath LAX is located at a depth of approximately 90 to 100 feet and is not a source of drinking water.

4.5.3.2.2 Known Contamination within the Hazardous Materials Study Area

Past activities conducted by LAWA, former and present tenants, or other parties have resulted in releases of hazardous materials or substances into the environment, causing soil and groundwater contamination at various locations. These incidents are identified in the EDR report, which contains various listings for past spills or hazardous materials incidents at different locations within the airport. Many of these past incidents are minor spills or leaks associated with aircraft and airfield-related maintenance operations, fueling activities, or the movement of cargo. The majority of these incidents are not considered areas of concern, based on further investigation or because they were responded to and cleaned up in accordance with applicable laws and regulations. Other listings in the EDR report are related to leaks of chemicals, fuels, or solvents from activities at the airport or from underground or aboveground storage tanks, which can travel through the soil to the groundwater. Information about contaminated sites within the hazardous materials study area is provided below.

Investigation and remediation of contaminated sites is undertaken by the party responsible. LAWA monitors known or potential groundwater contamination through the Environmental Programs Group. LAWA's monitoring program tracks the progress of tenant investigation, monitoring, and remediation activities associated with groundwater contamination sites at LAX to ensure that adequate and

appropriate cleanup goals are set and attained. All facilities with known groundwater contamination are regulated by the Los Angeles RWQCB, which reviews and approves all work plans and establishes and enforces remediation requirements and schedules. Although LAWA oversees the status of remediation activities on the airport, individual tenants are generally responsible for ensuring that groundwater contamination is remediated to the satisfaction of the Los Angeles RWQCB.

Table 4.5-1 summarizes known contamination sites within the hazardous materials study area that are currently undergoing remediation or are expected to in the future, and that could be affected by Project construction. The locations of these sites are identified in **Figure 4.5-1**. Sites that pose the greatest threat to human health and the environmental are National Priorities List (NPL) sites, also known as "Superfund" sites. There are no NPL-listed or NPL-candidate sites located within the hazardous materials study area. As shown in Table 4.5-1, there are three sites with known contamination within the proposed Project improvement areas. The status of current investigation, remediation, and/or monitoring efforts at these sites is discussed below.

AlliedSignal/Honeywell

The EDR Report includes several listings for the AlliedSignal Aerospace Company and the Honeywell International Company at the Park One site (9851 Sepulveda Boulevard). Table 4.5-1 provides a summary of the site, and its location is depicted in Figure 4.5-1 (see Site 1). Information and reports posted to GeoTracker indicate that the property was previously used for various manufacturing operations by Garrett AiResearch, which was subsequently purchased by AlliedSignal (now known as Honeywell). The site is currently occupied by LAX-it, LAX's passenger pickup area for taxis and TNCs like Uber and Lyft and was previously used as a commercial parking lot (operated under lease as Park 'N Fly @ Park One LAX). It is the proposed location for Concourse 0.

Thirteen USTs were previously used at the facility to store petroleum products, waste oil, and spent solvents. Some of the USTs were removed in the 1980s; the remaining USTs were removed in 1990-1991. The site has been under environmental investigation since 1989, when an initial site investigation was conducted and found that soil and groundwater at the site were impacted by VOCs (including chlorinated hydrocarbons) and 1, 4-dioxane.[11] The majority of contamination is located in the northwest quadrant of the site. The status of remediation efforts at the AlliedSignal/Honeywell site is detailed below.

Soil Contamination

During 1990-1991, shallow soil at the site was selectively excavated to remove VOC-impacted soils. In addition, a shallow soil vapor extraction (SVE) system (generally less than 70 feet below ground surface) was installed throughout the site during this time, which ultimately resulted in the removal of approximately 375,000 pounds of VOCs. Soil closure for three of the four quadrants on the site was received in 1993.[12] A deeper (below 65 feet) SVE/VER (vapor enhanced recovery) system was installed in 2000 that focused on remaining soil contamination in the northwest quadrant of the site. This SVE system operated almost continuously until 2010. Currently, due to the relatively low levels of VOCs remaining in the soil, it is only operated on a periodic basis. Between 2000 and 2018, the SVE/VER system removed approximately 36,200 pounds of VOCs.[13] In addition, VOCs have been removed from selected dewatered perched groundwater zones.

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11 MACTEC Engineering and Consulting, Inc., *Second 2007 Semiannual Groundwater Monitoring Report Former Honeywell Sepulveda Site, Los Angeles, California*, October 15, 2007.

12 Wood Environmental & Infrastructure Solutions, Inc., *2018 Soil Vapor Extraction System Progress Report Former AlliedSignal Park One Site*, December 2018.

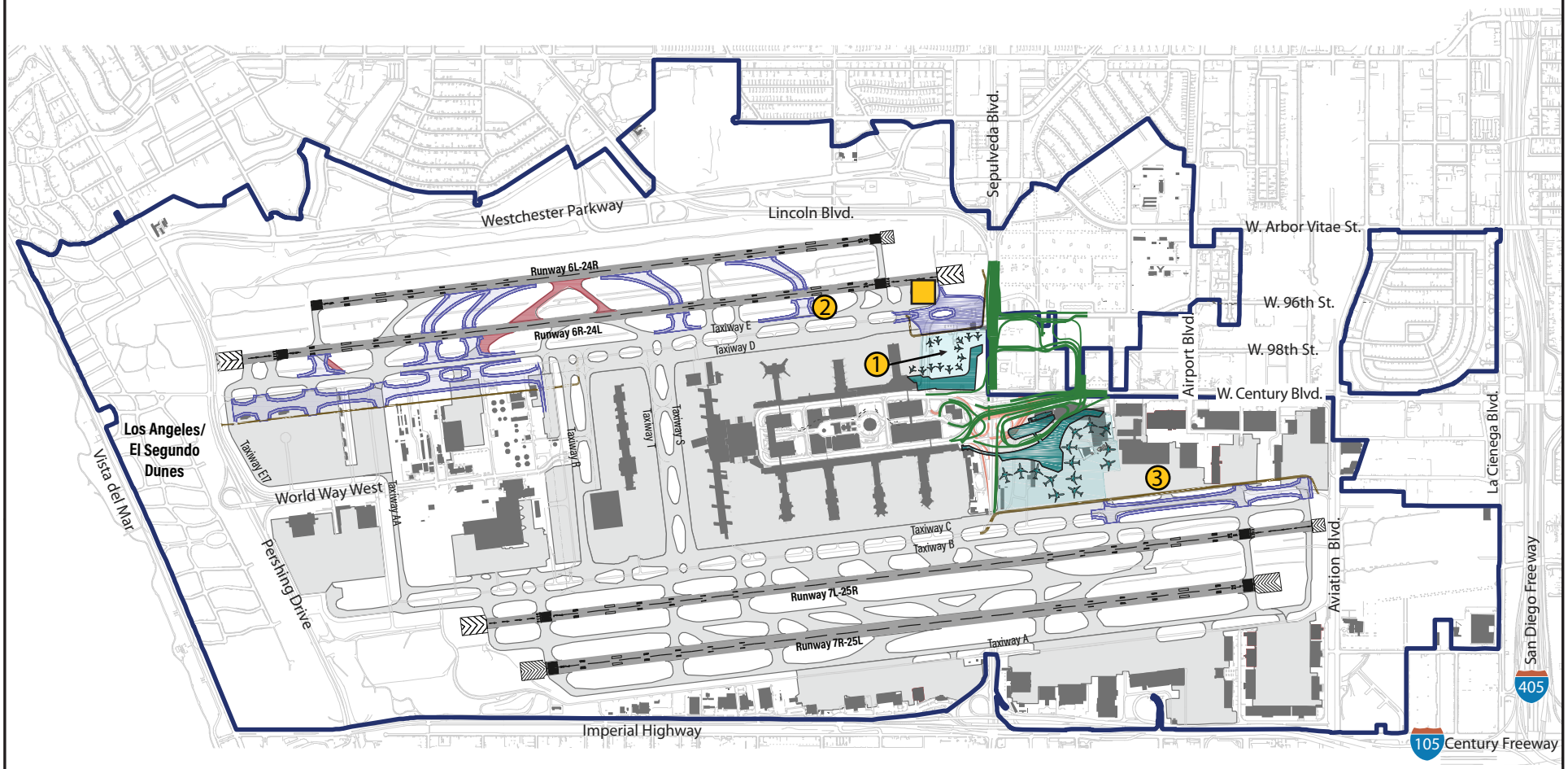
13 Wood Environmental & Infrastructure Solutions, Inc., *2018 Soil Vapor Extraction System Progress Report Former AlliedSignal Park One Site*, December 2018.

Table 4.5-1
Sites with Planned or Ongoing Remediation in the Vicinity of Project Components

Site No. (see Figure 4.5-1)	Site Name	Project Component				Contaminant	Media	Comments
		Airfield	C0	T9	Roadways			
1	AlliedSignal/Honeywell 9851 Sepulveda Boulevard		X		X	Hydrocarbons, halogenated VOCs, and related compounds	Soil and Groundwater	Soil remediation is largely complete; a soil vapor extraction system in the northwest quadrant of the site is operated intermittently to address remaining VOCs. Groundwater contamination exists beneath the site and off-site to the east and is monitored by a system of wells. Groundwater remediation is anticipated to occur in the future. EDR numbers 125-131.
2	Terminal 1 Fuel Valve Vault 250 World Way West	X				Jet fuel and related compounds	Soil and Groundwater	Located in the vicinity of the easternmost runway exit improvements. Assessment, monitoring, and remediation (i.e., free product removal) are ongoing. EDR number G42.
3	United Airlines Maintenance Operations Center 6000-6024 Avion Drive			X		Hydrocarbons, VOCs, Stoddard solvents, and related compounds	Soil and Groundwater	Remediation completed on much of the site, but ongoing in a small area with jet fuel recovery. Groundwater flow direction is to the east, away from the proposed Terminal 9. EDR grouping AE281-285, 295, 296.

Sources: **Appendix E** of this EIR; MACTEC Engineering and Consulting, Inc., *Second 2007 Semiannual Groundwater Monitoring Report Former Honeywell Sepulveda Site, Los Angeles, California*, October 15, 2007; Wood Environmental & Infrastructure Solutions, Inc., *2018 Soil Vapor Extraction System Progress Report Former AlliedSignal Park One Site*, December 2018; Wood Environmental & Infrastructure Solutions, Inc., *Work Plan for Interim Groundwater Containment System Former AlliedSignal Park One Site*, June 2019; Alta Environmental, *Conceptual Site Model Terminal 1 and 2 Fuel Hydrant Vaults*, prepared for Los Angeles World Airports, October 10, 2018; Environmental Resources Management, *Human Health Risk Assessment, United Airlines Maintenance Operations Center, Los Angeles International Airport*, January 2011.

Key:
C0 = Concourse 0
T9 = Terminal 9
VOC = volatile organic compound



Legend

- LAX Property Boundary
- Airfield Improvements
- Terminal and Related Improvements
- Taxiway to be Removed or Decommissioned
- Vehicle Service Road
- Roadway Improvements
- Roadway to be Demolished
- Hazardous Materials Site of Concern
  Note: Numbers correspond to Table 4.5-1
- PFAS Investigation Site
  PFAS = Per- and Poly-Fluoroalkyl Substances

0 1,500 3,000 Feet
Scale

Source: CDM Smith, June 2020
Prepared by: CDM Smith, October 2020

LAX Airfield and Terminal Modernization Project	Known Hazardous Materials Sites of Concern	Figure 4.5-1

Groundwater Contamination

From 1990 through 1992, investigations were performed to assess the extent of contamination in the groundwater, which confirmed the presence of VOCs and 1,4-dioxane in the groundwater (approximately 90 to 100 feet below ground surface) and perched water on the site, as well as groundwater off-site to the east (groundwater generally flows to the east).[14,15] The source of the groundwater contamination appears to be located in the northwest quadrant of the Park One site. Concentrations of groundwater contaminants at the site have generally decreased since 1997.[16] Since then, additional monitoring wells have been placed on-site and off-site to delineate the extent of contaminant migration, and to monitor concentrations over time. Honeywell is working with the Los Angeles RWQCB and LAWA to identify a long-term groundwater remediation system location that would be compatible with LAWA's plans to redevelop the site (i.e., the proposed Concourse 0). As noted above, groundwater beneath LAX, including the AlliedSignal/Honeywell site, is not a source of drinking water.

Terminal 1 Fuel Valve Vault

As identified in the EDR Report, a jet fuel spill occurred at the Terminal 1 Fuel Valve Vault, which is located along the east end of the north airfield between Runway 6R-24L and Taxiway E. As shown on Figure 4.5-1 (Site 2), this site is located in close proximity (approximately 80 feet) to the easternmost proposed Runway 6L-24R exit. The fuel spill occurred on March 8, 2015 when a valve flange gasket leaked at the Terminal 1 Valve Vault, causing fuel to overflow to the surrounding soil.[17] Soil and groundwater sampling conducted in the vicinity of the Terminal 1 Fuel Valve Vault in 2016 and 2017 showed that the fuel spill had migrated through the soil to groundwater, which lies approximately 100 feet below ground surface. Isopleths[18] of the soil and groundwater concentrations presented in a technical report prepared for the site indicate that the migration is limited to the area in the vicinity of the valve vault.[19] Chemicals of concern include elevated levels of total petroleum hydrocarbons (TPH) in soil and groundwater, including in shallow soils; relatively low levels of VOCs in soil and groundwater; and low levels of 1,4-dioxane in soil. In addition, there is free product[20] (i.e., jet fuel) in groundwater beneath the site. Regular free product removal events using a submersible pump have occurred to remove free product from groundwater. Additional assessment is necessary to further delineate the extent of groundwater contamination.[21] A summary of the Terminal 1 Fuel Valve Vault site is provided in Table 4.5-1.

United Airlines Maintenance Operations Center

The United Airlines (UAL) Maintenance Operations Center (MOC), which has been in operation since the 1940s, contains two hangars used for light aircraft and vehicle maintenance, former USTs, active and abandoned jet fuel hydrant systems, and various other aboveground and underground features.[22] As shown in Figure 4.5-1 (see Site 3), the UAL MOC is located adjacent to and east of the proposed Terminal

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14 MACTEC Engineering and Consulting, Inc., *Second 2007 Semiannual Groundwater Monitoring Report Former Honeywell Sepulveda Site*, *Los Angeles, California*, October 15, 2007.

15 Wood Environmental & Infrastructure Solutions, Inc., *2019 Annual Groundwater Monitoring Report Former AlliedSignal Park One Site*, October 2019.

16 Wood Environmental & Infrastructure Solutions, Inc., *2018 Soil Vapor Extraction System Progress Report Former AlliedSignal Park One Site*, December 2018.

17 Alta Environmental, *Conceptual Site Model Terminal 1 and 2 Fuel Hydrant Vaults*, prepared for Los Angeles World Airports, October 10, 2018.

18 An isopleth is a line on a map connecting places registering the same amount or ratio of some geographical or meteorological phenomenon or phenomena.

19 Alta Environmental, *Conceptual Site Model Terminal 1 and 2 Fuel Hydrant Vaults*, prepared for Los Angeles World Airports, October 10, 2018.

20 Free product, also referred to as non-aqueous phase liquid (NAPL), is petroleum contamination that exists as a discrete substance and that does not mix with or dissolve in water. Because petroleum is lighter than water, free product floats on top of groundwater.

21 California Water Boards, Los Angeles Regional Water Quality Control Board, *Conceptual Site Model Review and Comments Terminal 1 and Terminal 2 Hydrant Vaults*, May 15, 2019.

22 Environmental Resources Management, *Human Health Risk Assessment, United Airlines Maintenance Operations Center, Los Angeles International Airport*, January 2011.

9 site. The easterly portion of the proposed Terminal 9 site would be located on a portion of the current MOC site. The EDR report identified several listings for leaking USTs at the UAL MOC (6020 Avion Drive), as well as a listing showing an open assessment in one remaining area. Information and technical reports for the UAL MOC (posted to GeoTracker) indicate the presence of VOCs and petroleum hydrocarbons in the soil and groundwater associated with jet fuel that lies beneath the site. Groundwater generally flows in an easterly direction beneath the UAL MOC (i.e., away from the proposed Terminal 9) and is approximately 95 feet below the ground surface. Table 4.5-1 provides a summary of the site.

Site investigations have identified an area with measurable free product in the groundwater located beneath the easterly hangar on the UAL leasehold, approximately 600 feet east of the Terminal 9 improvement area and approximately 325 feet north of the proposed relocated south airfield vehicle service road. This area was recommended for further remedial actions (active soil remediation and continued free product recovery). However, remediation of dissolved-phase groundwater contamination in this area was determined to be unwarranted due to the contained nature of the plume on the site and the lack of nearby receptors.[23] A free product recovery system has been operating at the MOC since 2004 and has removed over 6,470 gallons of product/liquid.[24] In addition, annual groundwater monitoring is conducted on the site. Three of the monitoring wells are located within the Terminal 9 site. One of these wells (MW-6) is located at the northwest corner of the LAX Records Retention Building, just east of the proposed easterly Terminal 9 gates; one well (MW-7) is located southwest of the existing American Eagle terminal, south of the proposed westerly Terminal 9 gates; the third well (MW-12) is located near the northwest corner of UAL's westerly hangar, beneath a proposed aircraft parking space. Recent groundwater monitoring showed no contaminants of concern exceeding California Maximum Contaminant Levels (MCL) at well MW-6. The monitoring showed elevated levels of trichloroethene at well MW-7 and MW-12.[25] These wells lie to the west of the UAL MOC contaminant plume; as noted above, groundwater in this portion of the airport flows to the east (i.e., groundwater beneath the UAL MOC flows away from wells MW-7 and MW-12).

4.5.3.2.3 Other Areas of Interest

Perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS) are fluorinated organic chemicals that are part of a larger group of man-made chemicals referred to as per- and poly-fluoroalkyl substances (PFAS). Neither USEPA nor the State of California has established enforceable Maximum Contaminant Levels (MCLs) or human health risk-based cleanup goals for soil or groundwater impacted by PFAS.[26] In 2016, the USEPA established the drinking water health advisory level of 70 parts per trillion (ppt) for PFOA and PFOS individually or combined.[27] These concentrations are considered screening levels only. In August 2019, the SWRCB's Division of Drinking Water issued drinking water notification levels for PFOS and PFOA at 6.5 ppt and 5.1 ppt, respectively, per recommendations from California's Office of Environmental Health Hazard Assessment (OEHHA). The Division of Drinking Water's PFOS/PFOA response level is a total PFOS and PFOA concentration of 70 ppt.[28] Note that groundwater beneath LAX is not a

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23 Environmental Resources Management, *Human Health Risk Assessment, United Airlines Maintenance Operations Center, Los Angeles International Airport*, January 2011.

24 Environmental Resources Management, *2018 Annual Groundwater Monitoring, System O&M, and Well Destruction Report, January 1 through December 31, 2018 United Airlines Maintenance Operations Center*, April 16, 2019.

25 Environmental Resources Management, *2018 Annual Groundwater Monitoring, System O&M, and Well Destruction Report, January 1 through December 31, 2018 United Airlines Maintenance Operations Center*, April 16, 2019.

26 City of Los Angeles, Los Angeles World Airports, *Per- and Polyfluoroalkyl Substances (PFAS) Investigation Report – Los Angeles International Airport*, prepared by Geosyntec Consultants, Inc., October 30, 2019.

27 In issuing a lifetime health advisory level (LHA), USEPA advised municipalities that they should notify their customers of the presence of levels over 70 nanograms per liter (or parts per trillion) in community water supplies. The LHA is the level, or amount, calculated to offer a margin of protection against adverse health effects to the most sensitive populations. USEPA has not set health advisory levels for the other PFAS chemicals.

28 California State Water Resources Control Board, *Perfluorooctanoic acid (PFOA) and Perfluorooctanesulfonic acid (PFOS)*. Available: https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/PFOA_PFOS.html, accessed December 3, 2019.

source of drinking water, therefore, these health advisory levels and notification levels are not presently known to be applicable to levels of PFAS found at the airport and vicinity.

PFAS can be found in fire-fighting foams (referred to as aqueous film-forming foam or AFFF) at airports and has been identified by USEPA as a source of groundwater contamination at airports where firefighting training and activities occur.[29] Accordingly, the SWRCB identified airport facilities in California that have accepted, stored, or used materials that may contain PFAS (in the form of fire suppression foams) and, through the Los Angeles RWQCB, issued an Order in March 2019 to the City of Los Angeles to prepare and submit a preliminary site investigation report of PFAS impacts at LAX.[30]

In response to the March 2019 order, LAWA completed a PFAS site investigation at LAX and submitted a preliminary report to the Los Angeles RWQCB in October 2019.[31] The objective of the investigation was to evaluate the potential presence of PFAS in soil and groundwater at locations at LAX where PFAS-containing chemicals were potentially used or released to the environment. A total of four locations were investigated in response to the order.[32] One of these locations is in proximity to the proposed Taxiway D and Taxiway E improvements associated with Concourse 0 (see Site 4 on Figure 4.5-1). In 1978, a Continental Airlines aircraft experienced a tire blowout and reportedly went off the east end of Runway 6R-24L, resulting in a rupture in the aircraft's fuel tank and ignition of a fire. Water and AFFF solution were used to extinguish the fire.

Of the four locations at LAX that were investigated for PFAS in response to the order, samples from the aforementioned Continental Airlines incident site contained the lowest level of PFAS impacts. PFAS detections at this site were less common and more sporadic, and no trend was observed at depth. The majority of the soil samples taken at the site had non-detectable levels of PFAS compounds. The highest detected concentrations of PFOS and PFOA in soil samples at this location were 1.1 microgram/kilogram (µg/kg) and 0.24 µg/kg, respectively. PFOS and PFOA were detected in groundwater at 2,800 ppt and 320 ppt, respectively.[33] In recent groundwater monitoring reports for the Terminal 1 Fuel Valve Vault and Terminal 2 Fuel Hydrant Loop, PFOS and PFOA were detected in groundwater at concentrations ranging from 1,900 to 2,520 ppt and from 370 to 371 ppt, respectively.[34] Both the Continental Airlines incident site and the Terminal 1 Fuel Valve Vault/Terminal 2 Fuel Hydrant Loop site are located under pavement, preventing direct exposure to PFAS-impacted soil or groundwater (although not precluding percolation through the PFAS-impacted zone). Moreover, as noted above, no drinking water sources are located in proximity to the sites.

On September 15, 2020, the Los Angeles RWQCB issued a second Order to the City of Los Angeles to further evaluate and delineate the lateral and vertical extent of PFAS compounds in soil (to non-detect levels or until groundwater is encountered) and in groundwater (to background or non-detect levels) in areas where previous PFAS compounds were detected.[35] LAWA is in the process of preparing a work plan in compliance with the September 2020 Order.

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29 U.S. Environmental Protection Agency, *Basic Information on PFAS*. Available: https://www.epa.gov/pfas/basic-information-pfas, accessed October 22, 2019.

30 California Water Boards, Los Angeles Regional Water Quality Control Board, *Water Code Section 13267 Order WQ 2019-0005-DWQ for the Determination of the Presence of Per- And Polyfluoroalkyl Substances at Los Angeles Intl, Airport ID LAX, Los Angeles County, T10000012773*, March 20, 2019.

31 City of Los Angeles, Los Angeles World Airports, *Per- and Polyfluoroalkyl Substances (PFAS) Investigation Report – Los Angeles International Airport*, prepared by Geosyntec Consultants, Inc., October 30, 2019.

32 The Los Angeles RWQCB also requested information regarding PFAS at the Terminal 1 Valve Vault and Terminal 2 Fuel Hydrant Loop site and the Former National Car Rental Facility site, which was included in the Investigation Report.

33 City of Los Angeles, Los Angeles World Airports, *Per- and Polyfluoroalkyl Substances (PFAS) Investigation Report – Los Angeles International Airport*, prepared by Geosyntec Consultants, Inc., October 30, 2019.

34 City of Los Angeles, Los Angeles World Airports, *Second Semiannual 2019 Groundwater Monitoring Report For Terminal 1 & Terminal 2 – Los Angeles International Airport*, prepared by Alta Environmental, January 15, 2020.

35 California Water Boards, Los Angeles Regional Water Quality Control Board, *Water Code Section 13267 Order No. R4-2020-0020 For the Subsurface Investigation of Per- And Polyfluoroalkyl Substances at Los Angeles International Airport*, September 15, 2020.

4.5.4 Thresholds of Significance

A significant hazardous materials impact would occur if the proposed Project would:

Threshold 4.5-1 Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

Threshold 4.5-2 Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or the environment.

These thresholds are from Appendix G of the State CEQA Guidelines.

4.5.5 Project Impacts

4.5.5.1 Impact 4.5-1

Summary Conclusion for Impact 4.5-1: The proposed Project would not create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment associated with existing soil and/or groundwater contamination remediation activities. This would result in a *less than significant impact* for construction and *no impact* for operations.

As discussed in Section 4.5.1, the potential for the proposed Project to create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment was determined to consist of three types of risks: inadvertent releases of hazardous or regulated materials during construction or operation; releases of hazardous building materials during demolition; and releases of hazardous materials related to existing soil and/or groundwater contamination. As noted in that section, the potential for the proposed Project to create a significant hazard associated with inadvertent releases of hazardous materials or releases of hazardous building materials was determined to be less than significant in the Initial Study. In addition, the potential for the proposed Project to create a significant hazard by encountering contaminated soils or groundwater during construction was also determined to be less than significant in the Initial Study. The discussion below focuses on the potential for the proposed Project to create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment due to interference with the remediation of soil and/or groundwater contamination.

4.5.5.1.1 Construction

Construction of Airfield Improvements

The proposed airfield improvements, including construction of the Taxiway D Extension to the west, reconfiguration of three of the four proposed runway exits from Runway 6L-24R, relocation of the vehicle service road, relocation and/or replacement of navigational aids, and other related enabling projects, would occur in areas of the airport that are not located in proximity to any active contamination remediation activities. Moreover, these improvements would be located at the ground surface and would not require excavation to the water table (groundwater is estimated to be approximately 90 to 100 feet below ground surface)[36] or groundwater dewatering. Therefore, construction of the above-mentioned

[36] Depth to groundwater was estimated based on information in the following: AECOM, *Semi-Annual Groundwater Level Monitoring Summary Report*, *Los Angeles International Airport*, 2017; and Alta Environmental, *Conceptual Site Model Terminal 1 and 2 Fuel Hydrant Vaults*, prepared for Los Angeles World Airports, October 10, 2018.

proposed airfield improvements would not result in releases of hazardous materials related to existing soil and/or groundwater contamination and would have ***no impact*** on ongoing soil and/or groundwater contamination remediation activities.

As discussed in Section 4.5.3.2.2, a past fuel spill at the Terminal 1 Fuel Valve Vault has resulted in soil and groundwater contamination located along the west end of the north airfield between Runway 6R-24L and Taxiway E in close proximity to the proposed easternmost runway exit from Runway 6L-24R. Several groundwater monitoring wells have been installed in the vicinity of the Terminal 1 Fuel Valve Vault site. Remediation at the site is not currently underway and future remediation plans have not been established. Therefore, the proposed Project would not interfere with any known remediation activities. Construction of the proposed easternmost runway exit from Runway 6L-24R could hinder future remediation activities, if such remediation is required to be undertaken. However, because future remediation plans have not been established, the potential of the proposed Project to interfere with future remediation is too speculative for evaluation. Regardless, because the Terminal 1 Fuel Valve Vault site is located in an area that is largely paved, and no drinking water sources are located in proximity to the site, construction of the easternmost runway exit from Runway 6L-24R would not create a significant hazard to the public or the environment from a release of hazardous materials related to existing soil and/or groundwater contamination. Impacts from the easternmost runway exit from Runway 6L-24R would be ***less than significant***.

Construction of Concourse 0

Concourse 0 would be designed to connect with the eastern end of Terminal 1. The Concourse 0 site is currently between 5 and 15 feet below the Terminal 1 apron elevation, which would require construction of retaining walls and placement of fill on much of the Concourse 0 site. As part of the site preparation for Concourse 0, existing infrastructure on the site would be demolished and the area would be cleared prior to fill placement and compaction. The extensive site preparation activities required for Concourse 0 would affect ongoing monitoring and remediation of contamination at the AlliedSignal/Honeywell site. Specifically, site preparation and construction would require the closure and removal of the existing SVE system, including wells, associated pipelines, and small aboveground vessels; removal and/or abandonment of groundwater monitoring and extraction wells; and removal of other underground infrastructure and aboveground equipment associated with the characterization, monitoring, and treatment of contamination at the site. As noted in Section 4.5.3.2, due to low levels of contamination remaining in the soil, the SVE system is only operated periodically. Moreover, Honeywell is working with LAWA to identify potential long-term groundwater remediation system options that would be compatible with the Concourse 0 improvements to enable Honeywell to continue to meet its remediation obligations. Modifications to the groundwater remediation system would be coordinated with, and would be subject to approval by, the Los Angeles RWQCB.

As noted above, Honeywell is required to remediate contamination associated with its past operations and implementation of the Concourse 0 improvements would not prevent Honeywell from undertaking this remediation. Groundwater beneath the site is not used for drinking water purposes. For these reasons, impacts to existing monitoring and remediation systems would not create a significant hazard to the public or the environment from a release of hazardous materials. This impact would be ***less than significant***.

Construction of Terminal 9

There are no past or present hazardous materials releases at the Terminal 9 site or the location of the associated airfield improvements that are currently undergoing characterization or remediation. However, the Terminal 9 site and the airfield improvements are located respectively west and south of the UAL MOC, which is undergoing remediation to recover free product in the groundwater beneath the

site. Construction of Terminal 9 would not directly affect the UAL MOC remediation activities, although construction would require closure of up to three monitoring wells located on the Terminal 9 site. Closure of the monitoring wells would not interfere with free product removal at the UAL MOC site as they are located upstream of the contamination and are only used to conduct groundwater monitoring, not in the remediation process. Moreover, the Terminal 9 facility would not preclude additional monitoring wells from being installed in the future should they be required. Consequently, the removal of these monitoring wells would not have an impact on human health or the environment. Therefore, construction of Terminal 9 and its associated airfield improvements adjacent to a site with known contamination would not result in releases of hazardous materials related to existing soil and/or groundwater contamination and impacts would be ***less than significant***.

Construction of Landside Access Improvements

The landside access improvements include various roadway improvements, some of which would be elevated, requiring construction of retaining walls in some locations and support piles in other locations. There are no ongoing remediation activities along the proposed roadways. However, the new roadway improvements would include a section that is located partially along the eastern boundary of the AlliedSignal/Honeywell site. There are several groundwater monitoring wells along the eastern edge of this site, and construction of this portion of the roadway improvements could require closure of one or more of these groundwater monitoring wells. Closure of monitoring wells would not interfere with remediation at the AlliedSignal/Honeywell site as they are not used in the remediation process. Moreover, the landside access improvements would not prohibit additional monitoring wells from being installed in the future should they be required. Consequently, the removal of these monitoring wells would not have an impact on human health or the environment. Therefore, construction of roadway improvements on and adjacent to a site with known contamination would not result in releases of hazardous materials and the impacts would be ***less than significant***.

Other Areas of Interest

PFAS

As noted above, a preliminary investigation conducted by LAWA did not detect PFAS in the majority of samples taken at the site of a 1978 Continental Airlines incident, although PFOA and PFOS were detected in some samples. This site is located in proximity to the proposed Taxiways D and E improvements associated with Concourse 0. Neither the state nor the federal government has established cleanup levels for PFAS found in soil and groundwater. LAWA is in the process of delineating the lateral and vertical extent of PFAS compounds in soil and groundwater, as required by the Los Angeles RWQCB in their September 2020 Order. Future remedial actions that may be required by the Los Angeles RWQCB are unknown at this time. As PFAS was not detected in the majority of samples at the Continental Airlines incident site, and no remediation activities to address PFAS contamination at the 1978 Continental Airlines site are planned at this time, construction of the improvements to Taxiways D and E associated with Concourse 0 would not damage or physically interfere with ongoing or planned future contamination monitoring or remediation activities. It is possible that the Taxiway D and E improvements could hinder future remediation activities, if such remediation is required to be undertaken. However, because future remediation plans have not been established, the potential of the proposed Project to interfere with future remediation is too speculative for evaluation. Regardless, because the Continental Airlines incident site is located in a paved area, and no drinking water sources are located in proximity to the site, this would not create a significant hazard to the public or the environment from a release of hazardous materials related to existing soil and/or groundwater contamination. Impacts from the Taxiway D and E improvements would be ***less than significant***.

4.5.5.1.2 Operations

Operation of the proposed Project would involve continuation of aircraft operations on the improved north airfield, new passenger accommodations at Concourse 0 and Terminal 9, and reconfigured vehicular access to and from the CTA via the improved roadway system and new APM station. Project operations would not involve excavation, extraction of groundwater, or any activity that could damage or physically interfere with ongoing contamination monitoring or remediation activities. As such, Project operations would not result in releases of hazardous materials and would result in ***no impact*** to soil and/or groundwater contamination monitoring or remediation activities.

4.5.5.1.3 Mitigation Measures

Because the proposed Project would result in a ***less than significant impact*** related to the potential to create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment from a site with known soil and/or groundwater contamination, no mitigation is required for construction or operations.

4.5.5.1.4 Significance of Impact After Mitigation

As indicated above, no mitigation is required to address the potential for the Project to create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment from a site with known soil and/or groundwater contamination. The proposed Project would result in a ***less than significant impact*** for construction and operations.

4.5.5.2 Impact 4.5-2

Summary Conclusion for Impact 4.5-2: Although the proposed Project would be located on sites which are included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 or other government databases, the Project would not create a significant hazard to the public or the environment. This would result in a *less than significant impact* for construction and *no impact* for operations.

As identified in Section 4.5.3.1.2, CalEPA has identified a number of data sources that provide information regarding facilities or sites identified as meeting the requirements of Government Code Section 65962.5. These data sources were queried with the following results:

- The Hazardous Waste and Substance Sites List maintained by the DTSC on the EnviroStor website was reviewed, and the proposed Project component sites are not listed.[37]
- The Open Active Leaking Underground Storage Tank Sites contained in the SWRCB's GeoTracker database was queried by zip code and city, and the Project component sites are not listed.[38]
- The list of solid waste disposal sites identified by the SWRCB with waste constituents above hazardous waste levels outside the waste management unit, as provided by CalEPA, was reviewed, and the Project component sites are not listed.[39]

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[37] California Department of Toxic Substances Control, *Hazardous Waste And Substances Site List (Cortese*). Available: https://www.envirostor.dtsc.ca.gov/public/search?cmd=search&reporttype=CORTESE&site_type=CSITES,FUDS&status=ACT,BKLG,COM&reporttitle=HAZARDOUS+WASTE+AND+SUBSTANCES+SITE+LIST+%28CORTESE%29, accessed October 15, 2019.

[38] State Water Resources Control Board, *GeoTracker – Open/Active Leaking Underground Storage Tank Search Results.* Available: https://geotracker.waterboards.ca.gov/search?CMD=search&case_number=&business_name=&main_street_name=&city=&zip=&county=&SITE_TYPE=LUFT&oilfield=&STATUS=+Open%2COpen+-+Active%2COpen+-+Assessment+%26+Interim+Remedial+Action%2COpen+-+Eligible+for+Closure%2COpen+-+Inactive%2COpen+-+Referred%2COpen+-+Remediation%2COpen+-+Reopen+Case%2COpen+-+Site+Assessment%2COpen+-+Verification+Monitoring&BRANCH=&MASTER_BASE=&Search=Search, accessed October 15, 2019.

[39] California Environmental Protection Agency, *Sites Identified With Waste Constituents Above Hazardous Waste Levels Outside The Waste Management Unit*. Available: https://calepa.ca.gov/wp-content/uploads/sites/6/2016/10/SiteCleanup-CorteseList-CurrentList.pdf, accessed October 15, 2019.

- The list of "active" CDOs and CAOs from the SWRCB was downloaded and reviewed, and the Project component sites are not listed.[40]
- The DTSC list of hazardous waste facilities subject to corrective action pursuant to Section 25187.5 of the Health and Safety Code contains only two facilities, and the Project component sites are not among them.[41]

As noted in Section 4.5.2, *Methodology*, a government records search was performed by EDR to identify potential areas of groundwater and/or soil contamination within the hazardous materials study area. The EDR search included lists that are additional to the ones identified above. These lists include, but are not limited to, the following:

- The CalEPA Office of Emergency Information's Historic Cortese List includes sites contained in other hazardous waste databases; this list is no longer being updated by the state.
- The Recovered Government Archive Leaking Underground Storage Tank (RGA LUST) database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists.
- The SWRCB's Cleanup Program Sites list, formerly known as the Spills, Leaks, Investigations, and Cleanups list, and referred to as the CPS-SLIC list, includes unauthorized discharges from spills and leaks, other than from USTs or other regulated sites.

Although the proposed Project component sites are not included on any of the current CalEPA Cortese list data resources, the AlliedSignal/Honeywell site is listed on the Historic Cortese, RGA LUST, and CPS-SLIC lists and the UAL MOC site is included on the RGA LUST and CPS-SLIC lists. These sites are currently undergoing monitoring and remediation, as described in Section 4.5.5.1. Because they are included on government lists of hazardous materials sites, for purposes of this EIR, the AlliedSignal/Honeywell site and the UAL MOC site are considered to be sites that are included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5.

4.5.5.2.1 Construction

Concourse 0, Terminal 9, and a portion of the roadway improvements would be located on sites which are included on lists of hazardous materials sites compiled pursuant to Government Code Section 65962.5 or other government databases. As described in Section 4.5.5.1.1 above, construction of these components of the proposed Project would not have an adverse effect on remediation activities at the listed sites that would create a significant hazard to the public or the environment. Therefore, this impact would be ***less than significant***.

4.5.5.2.2 Operations

Although Concourse 0, Terminal 9, and a portion of the roadway improvements would be located on sites which are included on lists compiled pursuant to Government Code Section 65962.5 or other government databases, operation of these Project components would not involve excavations, extraction of groundwater, or any activity that could damage or physically interfere with ongoing or future contamination monitoring or remediation activities at the listed sites. As such, Project operations would result in ***no impact*** to the public or the environment.

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[40] California Environmental Protection Agency, *Site Cleanup-Cortese List-Current List.* Available: https://calepa.ca.gov/wp-content/uploads/sites/6/2016/10/SiteCleanup-CorteseList-CDOCAOList.xlsx, accessed October 15, 2019.

[41] California Environmental Protection Agency, *Cortese List: Section 65962.5(a)*. Available: https://calepa.ca.gov/sitecleanup/corteselist/section-65962-5a/, accessed October 18, 2019.

4.5.5.2.3 Mitigation Measures

Because the proposed Project would result in a ***less than significant impact*** related to the potential to create a significant hazard to the public or the environment due to the location of Project components on sites included on lists of hazardous materials sites compiled pursuant to Government Code Section 65962.5 or other government databases, no mitigation is required for construction or operations.

4.5.5.2.4 Significance of Impact After Mitigation

As indicated above, no mitigation is required to address the potential for the Project to create a significant hazard to the public or the environment due to the location of Project components on sites which are included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 or other government databases. The proposed Project would result in a ***less than significant impact*** for construction and operations.

4.5.6 Cumulative Impacts

Hazardous materials contamination impacts are typically site or area specific, and new projects do not generally interact with other development projects to produce cumulative effects, unless the other development projects are on the same sites or in close proximity to each other. Therefore, the geographic area of the cumulative impacts analysis for hazardous materials includes the proposed Project site and immediately adjacent areas. Table 3-1 in Chapter 3, *Overview of Project Setting*, identifies development projects at or adjacent to LAX. These projects are shown in Figure 3-1. As can be seen in Figure 3-1, with the exception of the United Airlines East Aircraft Maintenance and GSE Project, none of the development projects is located on or near any proposed Project component site and, therefore, the remaining cumulative projects would not result in impacts that are additive to proposed Project impacts with respect to hazardous waste delineation, monitoring, and/or remediation activities associated with past releases of hazardous materials into the environment. Cumulative impacts associated with the United Airlines East Aircraft Maintenance and GSE Project are discussed below.

Both the Terminal 9 component of the proposed Project and the United Airlines East Aircraft Maintenance and GSE Project are located at or adjacent to the UAL MOC site. As noted in Section 4.5.5.1.1, construction of Terminal 9 would require the removal of up to three groundwater wells that are associated with the UAL MOC remediation system. Closure of the monitoring wells would not interfere with free product removal at the UAL MOC site and, consequently, would not have an impact on human health or the environment. Therefore, impacts from construction of Terminal 9 and its associated airfield improvements adjacent to a site with known contamination would be less than significant***.***

Implementation of the United Airlines East Aircraft Maintenance and GSE Project would also have impacts to the UAL MOC remediation system. Under that project, the existing UAL maintenance facility is being reconfigured and redeveloped to better serve and maintain the airline's aircraft and ground support equipment. All of the buildings on the site will be demolished and a new aircraft hangar and GSE facility will be constructed.[42] In association with the United Airlines East Aircraft Maintenance and GSE Project, United Airlines received approval from the Los Angeles RWQCB to abandon six groundwater monitoring wells and one free-product recovery well on the east side of the UAL MOC site, and to temporarily suspend the free product recovery system during project demolition and construction. Upon completion of the project, the system will be re-installed and the remaining wells will be reconstructed and

[42] City of Los Angeles, Los Angeles World Airports, *Final Environmental Impact Report for Los Angeles International Airport (LAX) United Airlines East Aircraft Maintenance and Ground Support Equipment Project*, (SCH 2017121019), Chapter 2 – Project Description, October 2018. Available: https://www.lawa.org/en/lawa-our-lax/environmental-documents/documents-certified/united-airlines-east-aircraft-maintenance.

recommissioned.[43] The Los Angeles RWQCB did not identify any environmental impacts to the long-term remediation of the UAL MOC due to the temporary suspension of the free product recovery system or the abandonment of some of the groundwater monitoring and free-product recovery wells. The temporary suspension and subsequent resumption of remediation activities at the UAL MOC would be carried out under the supervision of the Los Angeles RWQCB, which has assumed lead regulatory authority over this clean-up. Therefore, impacts associated with implementation of the United Airlines East Aircraft Maintenance and GSE Project on the UAL MOC remediation program will be less than significant.

Because impacts of the proposed Project on the UAL MOC remediation program would be less than significant, and disruption of the UAL MOC remediation program from the United Airlines East Aircraft Maintenance and GSE Project will be temporary, the cumulative impact would be ***less than significant***.

4.5.7 Summary of Impact Determinations

Table 4.5-2 summarizes the impact determinations of the proposed Project related to hazardous materials, as described above in Sections 4.5.5 and 4.5.6. Impact determinations are based on the significance criteria presented in Section 4.5.4, and the information and data sources cited throughout Section 4.5.

Table 4.5-2
Summary of Impacts and Mitigation Measures Associated with the Proposed Project Related to Hazardous Materials

Environmental Impacts	Impact Determination	Mitigation Measures	Level of Significance After Mitigation
Impact 4.5-1: The proposed Project would not create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment associated with existing soil and/or groundwater contamination remediation activities. This would result in a ***less than significant impact*** for construction and ***no impact*** for operations.	Construction: Less than Significant Impact Operation: No Impact	Construction: No mitigation is required Operation: No mitigation is required	Construction: Less than Significant Operation: No impact
Impact 4.5-2: Although the proposed Project would be located on sites which are included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 or other government databases, the Project would not create a significant hazard to the public or the environment. This would result in a ***less than significant impact*** for construction and ***no impact*** for operations.	Construction: Less than Significant Impact Operation: No Impact	Construction: No mitigation is required Operation: No mitigation is required	Construction: Less than Significant Operation: No impact

[43] California Water Boards, Los Angeles Regional Water Quality Control Board, *Well Abandonment Approval United Airlines Maintenance Operation Center*, December 6, 2018.

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4.6 Land Use and Planning

4.6.1 Introduction

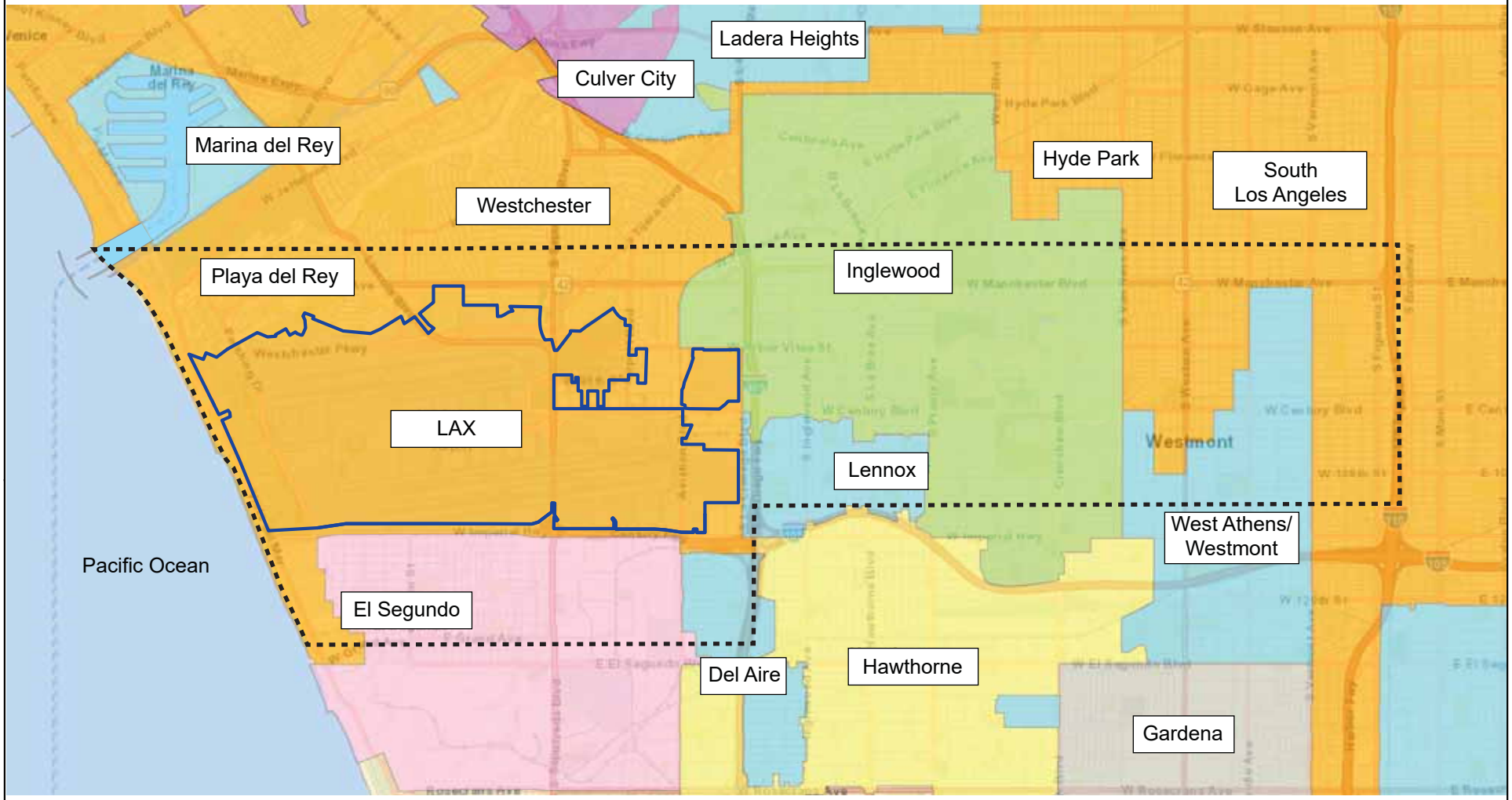
This section provides a description of the general land uses in and around the Project site and vicinity and presents applicable land use plans, policies, and regulations. This section also analyzes the potential for the proposed Project to cause a significant environmental impact due to a conflict with such land use plans, policies, or regulations, focusing on those plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect.

Prior to the preparation of this EIR, an Initial Study (included as **Appendix A** of this EIR) was prepared using the CEQA Environmental Checklist Form to assess potential environmental impacts on land use and planning. For one of these screening criteria, the Initial Study found that the proposed Project would result in "No Impact" and, thus, no further analysis of this topic in an EIR is required. Based on the Initial Study screening criteria related to land use and planning, the following potential impact does not require any additional analysis in this EIR:

- Potential impacts from physically dividing a community were evaluated and determined to have no impact in the Initial Study. The Project site is located entirely within an existing urbanized area, and the majority of the land uses within the Project site are related to the operation of LAX. Off-airport land uses located adjacent to the proposed landside access improvements include hotels, commercial/office uses, and surface and structured parking, and commercial vehicle facilities. Development of the proposed Project improvements would not disrupt or divide the physical arrangement of an established community, as off-airport land uses would continue to have access to the surrounding roadway network and would continue to be accessible to their patrons. Therefore, no impacts resulting from physically dividing an established community would occur with the implementation of the proposed Project and no further evaluation of this potential impact is required.

4.6.2 Methodology

This assessment of potential land use and planning effects of the proposed Project focuses on the identification of applicable land use plans and policies and assesses if the proposed Project is generally consistent with those plans and policies. The overall land use study area, including jurisdictional boundaries therein, is shown in **Figure 4.6-1**. The study area includes land uses located in proximity to the proposed Project that could be directly affected by the proposed Project or to potential land use incompatibility. Since the potential for incompatible land use is primarily related to aircraft noise, the land use study area extends to the east beyond the immediate LAX vicinity to include surrounding communities and jurisdictions that may be subject to indirect land use impacts as a result of aircraft noise. In order to account for these indirect land use impacts, the study area is generally commensurate with the future aircraft noise contours under the proposed Project (discussed further in Section 4.7.1, *Aircraft Noise*). The land use study area includes the City of Los Angeles, unincorporated areas in Los Angeles County, and the cities of El Segundo and Inglewood. Specifically, the southerly portion of the land use study area includes parts of the City of El Segundo and the unincorporated areas of Del Aire and Athens, as well as the entirety of the unincorporated area of Lennox; the northerly portion includes parts of the City of Los Angeles communities of Playa del Rey and Westchester; and the central and easterly portion includes parts of the City of Inglewood and the City of Los Angeles community of South Los Angeles.



0 0.25 0.5 Miles

Scale

Source: CDM Smith, ArcGIS Online, 2019
Prepared by: CDM Smith, October 2020

Legend

- Land Use Study Area
- LAX Property Boundary
- City of Los Angeles
- County of Los Angeles
- El Segundo
- Inglewood
- Hawthorne
- Culver City
- Gardena

LAX Airfield and Terminal Modernization Project

Communities and Jurisdictional Boundaries

Figure **4.6-1**

The impact analysis evaluates the proposed Project's consistency with land use plans, policies, and regulations by identifying potential conflicts with those that were adopted for the purpose of avoiding or mitigating environmental effects. A project is considered to be consistent with a general plan and related planning documents if, considering all its components, it will meet the general intent of the plan, further the objectives and policies of the plan, or not obstruct their attainment. A given project need not be in perfect conformity with each and every policy, nor does state law require precise conformity of a proposed project with every policy or land use designation for a site.[1] These factors were considered when evaluating the potential for the proposed Project to conflict with specific individual plans or policies that were adopted for the purpose of avoiding or mitigating environmental effects.

Inconsistencies with a plan are not themselves environmental impacts. In order to be considered an environmental impact, any such inconsistency would have to result in a physical change in the environment. Thus, plan inconsistencies analyzed below in Section 4.6.5 are not considered environmental impacts unless they would result in a physical change in the environment that would cause a significant environmental impact.

4.6.3 Existing Conditions

4.6.3.1 Regulatory Setting

This section identifies and describes the existing land use plans, regulations, and policies that were adopted for the purpose of avoiding or mitigating an environmental effect within the land use study area. The regulatory setting includes land use plans and policies administered by the Southern California Association of Governments (SCAG), County of Los Angeles, City of Los Angeles, and other jurisdictions within the study area.

4.6.3.1.1 Regional Plans

Southern California Association of Governments

The Project site is located within the SCAG Planning Area. SCAG is a Joint Powers Authority under California state law and fulfills several roles in Southern California, including as a federal Metropolitan Planning Organization (MPO), a state Regional Transportation Planning Agency (RTPA), and a state Council of Governments (COG). SCAG represents six counties (Ventura, Orange, San Bernardino, Riverside, Imperial, and Los Angeles). SCAG is mandated by federal and state law to develop plans for transportation and sustainable communities. It develops a regional growth forecast that is the foundation for these plans and for regional air quality plans developed by the South Coast Air Quality Management District (SCAQMD). SCAG is responsible for reviewing regionally significant plans, projects, and programs for consistency with SCAG's adopted regional plans. SCAG plans applicable to the proposed Project are described below.

SCAG 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy

On November 7, 2019, SCAG released the proposed draft 2020–2045 RTP/SCS, referred to as Connect SoCal, for public review. Subsequently, on May 7, 2020, the proposed final document was adopted for the limited purpose of federal transportation conformity. On September 3, 2020, the SCAG Regional Council formally adopted Connect SoCal and the addendum to the Connect SoCal Program Environmental Impact

[1] *San Francisco Tomorrow et al. v. City and County of San Francisco* (2014) 229 Cal.App.4th 498; *Sierra Club v. County of Napa* (2004) 121 Cal.App.4th 1490; *San Franciscans Upholding the Downtown Plan v. City & County of San Francisco* (2002) 102 Cal.App.4th 656; *Sequoyah Hills Homeowners Assn. v. City of Oakland* (1993) 23 Cal.App.4th 704, 719.

Report.[2,3] No changes relevant to the proposed Project were made to the RTP/SCS between the time that the RTP/SCS was adopted for the purposes of federal transportation conformity on May 7, 2020 and the time that the RTP/SCS was adopted in full on September 3, 2020.[4] Connect SoCal builds upon and expands land use and transportation strategies established over several planning cycles to increase mobility options and achieve a more sustainable growth pattern. The plan demonstrates how the region will meet its GHG reduction targets as required by Senate Bill 375[5] and meet the National Ambient Air Quality Standards set forth by the federal Clean Air Act.[6]

Connect SoCal contains the following land use goals that were adopted for the purpose of avoiding or mitigating an environmental effect and are relevant to the proposed Project:

- **Goal 5:** Reduce greenhouse gas emissions and improve air quality
- **Goal 7:** Adapt to a changing climate and support an integrated regional development pattern and transportation network

Connect SoCal includes an Aviation and Airport Ground Access Technical Report, which recognizes that the primary commercial airports in the region play a critical role in the movement of people and goods throughout the region, and that air transport is a major contributor to the SCAG region and global economic prosperity. The plan forecasts total air passenger demand in the region to increase from 110.17 MAP in 2017 to 197.14 MAP in 2045. The MAP forecast was based on a compounded annual growth rate of 2.1 percent starting from the 2017 MAP. For LAX, Connect SoCal includes a forecast of 127 MAP for LAX by 2045.[7]

As stated in the Aviation and Ground Access Technical Report, "SCAG's focus in aviation planning is to ensure adequate ground transportation planning and improving ground access to the region's airports in response to potential future aviation demands."[8] The Technical Report notes that it is critical that aviation and transportation stakeholders collaborate and work together in order to creatively plan for the future needs of the surface transportation system in and around the region's airports.

County of Los Angeles

Los Angeles County plans that are relevant to the proposed Project include the Los Angeles County General Plan and the Airport Land Use Plan. The Los Angeles County General Plan provides the policy framework and establishes the long-range vision for how and where the unincorporated areas will grow, and establishes goals, policies, and programs to foster healthy, livable, and sustainable communities.[9] The

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2 Southern California Association of Governments, *Press Release: SCAG Regional Council formally adopts Connect SoCal*, September 3, 2020. Available: https://www.connectsocal.org/Pages/details.aspx?list=Announcements&lid=49, accessed September 18, 2020.

3 Southern California Association of Governments, *Connect SoCal: The 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy of the Southern California Association of Governments,* adopted September 3, 2020. Available: https://www.connectsocal.org/Documents/Adopted/0903fConnectSoCal-Plan.pdf.

4 Southern California Association of Governments, *Connect SoCal Update*, July 2, 2020. Available: https://www.connectsocal.org/Documents/Agendas/rc070220agn04.pdf.

5 Pursuant to Senate Bill (SB) 375 (Steinberg, 2008), as codified in Government Code §65080(b) et seq., SCAG must prepare a Sustainable Communities Strategy that will be incorporated into the RTP and demonstrates how the region will meet its greenhouse gas reduction targets as set forth by the California Air Resources Board.

6 Southern California Association of Governments, *Connect SoCal: The 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy of the Southern California Association of Governments*, adopted September 3, 2020. Available: https://www.connectsocal.org/Documents/Adopted/0903fConnectSoCal-Plan.pdf.

7 Southern California Association of Governments, *Connect SoCal Technical Report: Transportation System - Aviation and Airport Ground Access*, adopted September 3, 2020. Available: https://www.connectsocal.org/Documents/Adopted/0903fConnectSoCal_Aviation-And-Airport-Ground-Access.pdf.

8 Southern California Association of Governments, *Connect SoCal Technical Report: Transportation System - Aviation and Airport Ground Access*, adopted September 3, 2020. Available: https://www.connectsocal.org/Documents/Adopted/0903fConnectSoCal_Aviation-And-Airport-Ground-Access.pdf.

9 County of Los Angeles, *Los Angeles County General Plan*, October 6, 2015. Available: http://planning.lacounty.gov/generalplan/generalplan.

County's General Plan is discussed further under Section 4.6.3.1.3. The County's Airport Land Use Plan, which is the primary tool for addressing LAX-related noise, is discussed below.

Los Angeles County Airport Land Use Plan

The State Aeronautics Act mandates that each county containing a public airport have an Airport Land Use Commission (ALUC), which is required to coordinate planning for the areas surrounding public use airports.[10] The purpose of the Act is "to protect public health, safety, and welfare by ensuring orderly expansion of airports and the adoption of land use measures that minimize the public's exposure to excessive noise and safety hazards within areas around public airports to the extent that these areas are not already devoted to incompatible uses."[11] This is achieved through review of proposed development surrounding airports and through policy and guidance provided in the Airport Land Use Plan (ALUP).

Caltrans, the agency with jurisdiction for administering the Act, published the *California Airport Land Use Planning Handbook* (Caltrans Handbook) to provide guidance to Airport Land Use Commissions when conducting airport land use compatibility planning as mandated by the Act.[12] The Los Angeles County Regional Planning Commission is the designated ALUC for airports within Los Angeles County and is responsible for preparing and implementing Los Angeles County's ALUP in accordance with the Caltrans Handbook.

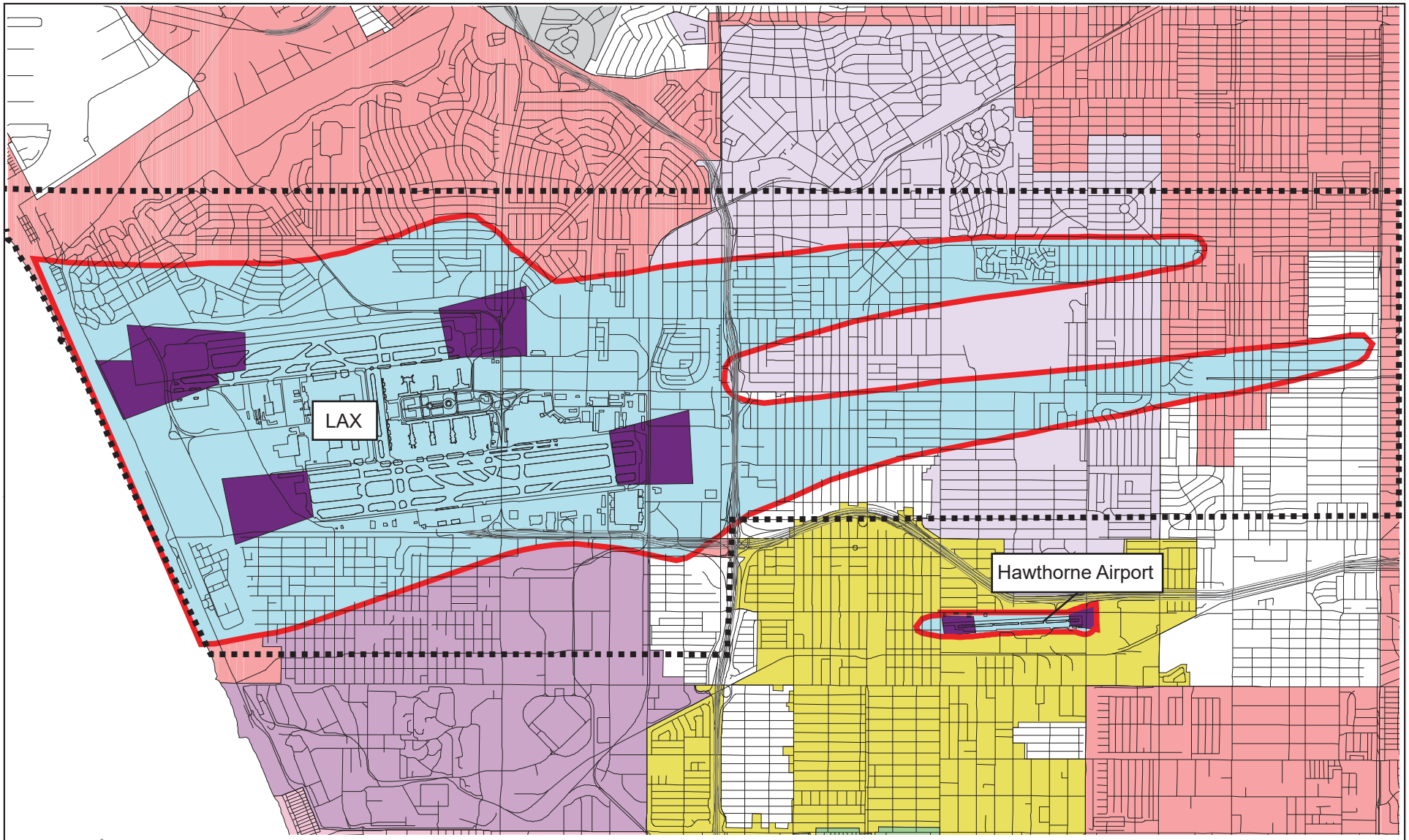
The Los Angeles County ALUP establishes provisions to ensure safe airport operations through the delineation of Runway Protection Zones (RPZs) and height restriction boundaries,[13] and to reduce excessive noise exposure to sensitive uses through noise insulation or land reuse. In addition, the ALUP establishes a planning boundary for each commercial airport within Los Angeles County to delineate areas subject to noise impacts and safety hazards, specifically, areas within the airport's 65 community noise exposure level (CNEL) noise contour and areas within the RPZ(s), respectively. Those noise and safety areas, together, determine the Airport Influence Area (AIA) specific to each airport. The General Plans and Specific Plans of cities within Los Angeles County must be consistent with ALUC land use policies. Amendments to a city's General Plan, Specific Plan, zoning ordinance, or building regulations within an airport's AIA require review by the ALUC and a Consistency Determination with the ALUP.

The ALUP for Los Angeles County includes policies addressing noise, safety, airspace hazards, and land use/noise compatibility criteria for new proposed land uses. The ALUP includes a Land Use Compatibility table; ALUP policies require new uses to adhere to the criteria set forth in that table and encourage the removal of incompatible land uses. The ALUP also includes policies prohibiting uses that would negatively affect safe air navigation, including limitations on height and light, from within the RPZ.[14]

As shown in **Figure 4.6-2,** the proposed Project is located within the AIA identified for LAX in the ALUP. In addition to lying within the airport's existing 65 CNEL noise contour, the proposed landside improvements extend into the RPZ for the north airfield complex.

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10 California Public Utilities Code, Sections 21670 et. seq.
11 California Public Utilities Code, Sections 21670(a)(2).
12 State of California, Department of Transportation, Division of Aeronautics, *California Airport Land Use Planning Handbook*, October 2011. Available: https://dot.ca.gov/-/media/dot-media/programs/aeronautics/documents/californiaairportlanduseplanninghandbook-a11y.pdf.
13 Height Restriction boundaries in the Los Angeles County ALUP are based on federal 14 CFR Part 77 airspace surfaces.
14 Los Angeles County Airport Land Use Commission, *Los Angeles County Airport Land Use Plan*, December 1, 2004. Available: http://planning.lacounty.gov/assets/upl/data/pd_alup.pdf.



Source: Los Angeles County Airport Land Use Commission,
Los Angeles County Airport Land Use Plan, December 1, 2004
Prepared by: CDM Smith, October 2020

LAX Airfield and Terminal Modernization Project

Los Angeles County Airport Land Use Plan
Airport Influence Area

Figure
4.6-2

4.6.3.1.2 City of Los Angeles Plans

City of Los Angeles General Plan

The General Plan for the City of Los Angeles includes a series of elements, each of which focuses on various aspects of the built environment. The General Plan consists of a Framework Element; a Land Use Element comprised of 35 community plans, the LAX Plan, and the Port of Los Angeles Plan; and the following citywide elements: Air Quality, Conservation, Health, Housing, Infrastructure Systems, Mobility Plan 2035 (Transportation Element), Noise, Open Space, Public Facilities and Services, and Safety. General Plan components that are relevant to the proposed Project include the Framework Element, Mobility Plan 2035, Noise Element, and two community plans that are part of the Land Use Element, specifically the LAX Plan and the Westchester-Playa del Rey Community Plan. These General Plan components are addressed in the sections that follow.

Framework Element

The Framework Element establishes the long-range strategy for addressing the City's long-term growth and defines citywide policies to be implemented through community plans and citywide elements.[15] The Framework Element's Land Use, Economic Development, and Infrastructure and Public Services chapters include policies addressing environmental effects that are relevant to the proposed Project; these policies are discussed below.

Framework Element Land Use Chapter

The land use policies contained in the General Plan Framework Element are intended to retain the City's residential neighborhoods and commercial districts and, when future growth occurs, encourage that growth to locate in neighborhood districts, commercial and mixed-use centers, along boulevards, in industrial districts, and in proximity to transportation corridors and transit stations.[16]

The Framework Element's Land Use chapter identifies policies for each of several land use categories that are shown in the Long-Range Land Use Diagrams for the City. The Project site is designated as a Regional Center land use category in the Long-Range Land Use Diagram for West/Coastal Los Angeles. The Regional Center in which LAX is located extends between Century Boulevard and 96th Street, and between Sepulveda Boulevard and La Cienega Boulevard. Regional centers are intended to serve as the focal points of regional commerce, identity, and activity and typically provide a significant number of jobs and non-work destinations that generate and attract a high number of vehicular trips. The chapter characterizes the Regional Center land use category as having a variety of urban and community-serving uses, including major transit hubs.[17] The Framework Element Land Use chapter includes the following policy that was adopted for the purpose of avoiding or mitigating an environmental effect and is relevant to the proposed Project due to the proposed Automated People Mover (APM) station, which would connect to the previously-approved LAX APM system and, thereby, to the previously-approved LAX Intermodal Transportation Facilities (ITFs), and Airport Metro Connector 96th Street Transit Station:

- **Policy 3.10.2:** Accommodate and encourage the development of multi-modal transportation centers, where appropriate.

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15 City of Los Angeles, Department of City Planning, *The Citywide General Plan Framework - An Element of the City of Los Angeles General Plan*, December 11, 1996, re-adopted August 8, 2001. Available: https://planning.lacity.org/cwd/framwk/chapters/00/00.htm.

16 City of Los Angeles, Department of City Planning, *The Citywide General Plan Framework - An Element of the City of Los Angeles General Plan*, Chapter 3, Land Use, adopted December 11, 1996, re-adopted August 8, 2001. Available: https://planning.lacity.org/cwd/framwk/chapters/03/030.htm.

17 City of Los Angeles, Department of City Planning, *The Citywide General Plan Framework - An Element of the City of Los Angeles General Plan*, Chapter 3, Land Use, Table 3-1, Land Use Standards and Typical Development Characteristics, adopted December 11, 1996, re-adopted August 8, 2001. Available: https://planning.lacity.org/cwd/framwk/chapters/03/tab31.htm.

Framework Element Economic Development Chapter

As noted above, the Framework Element includes an Economic Development chapter with policies that were adopted for the purpose of avoiding or mitigating an environmental effect and are relevant to the proposed Project. The Economic Development chapter of the General Plan Framework Element addresses policies and programs to promote business retention and job growth within the City. The chapter states that "the City must take advantage of the critical role of… the Los Angeles International Airport in supporting the local economy." LAX is identified as a candidate for the consideration of economic strategies and implementation priorities. The chapter identifies LAX as an area with broad regional and international market links and recognizes that improvement of the airport "will have a regional impact on employment and economic growth."[18] The Economic Development chapter includes the following policies specific to LAX, and relevant to the proposed Project, that were adopted for the purpose of avoiding or mitigating an environmental effect:[19]

- **Policy 7.2.13:** Facilitate environmentally sound operations and expansion of the Port of Los Angeles and the Los Angeles International Airport as major drivers of the local and regional economy.
- **Policy 7.3.4:** Recognize the crucial role that the Port of Los Angeles and the Los Angeles International Airport play in future employment growth by supporting planned Port and Airport expansion and modernization that mitigates its negative impacts.

Framework Element Infrastructure and Public Services Chapter

The Infrastructure and Public Services chapter of the Framework Element contains the following policy that was adopted for the purpose of avoiding or mitigating an environmental effect and is relevant to the proposed Project:

- **Policy 9.9.7:** Incorporate water conservation practices in the design of new projects so as to not impede the City's ability to supply water to its other users or overdraft its groundwater basins.

Mobility Plan 2035

Mobility Plan 2035, adopted in 2015 and subsequently amended in 2016, is the General Plan Transportation Element for the City of Los Angeles. Mobility Plan 2035 serves as a guide to further the development of a citywide transportation system in a manner that provides for the efficient movement of people and goods. The Plan establishes policies and programs to provide safe and accessible streets for vehicles, pedestrians, bicycles, and transit users throughout the City. Many of the policies relate to roadway design and envision a balanced, multi-modal transportation system with connections throughout the City to improve mobility and create a more pedestrian-friendly atmosphere.[20] Mobility infrastructure, including roadway and bicycle transportation, is discussed further under Section 4.8, *Transportation*. The Plan establishes the broad framework to enhance multiple modes of transportation throughout the City, including bicycle, transit, pedestrian, and vehicle.

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[18] City of Los Angeles, Department of City Planning, *The Citywide General Plan Framework - An Element of the City of Los Angeles General Plan*, Chapter 7, Economic Development, Figure 7-1, Citywide Economic Strategies, adopted December 11, 1996, re-adopted August 8, 2001. Available: https://planning.lacity.org/cwd/framwk/chapters/07/fig7-1.htm.

[19] City of Los Angeles, Department of City Planning, *The Citywide General Plan Framework - An Element of the City of Los Angeles General Plan*, Chapter 7, Economic Development, adopted December 11, 1996, re-adopted August 8, 2001. Available: https://planning.lacity.org/cwd/framwk/chapters/07/07.htm.

[20] City of Los Angeles, Department of City Planning, *Mobility Plan 2035 - An Element of the General Plan*, amended September 7, 2016. Available: https://planning.lacity.org/odocument/523f2a95-9d72-41d7-aba5-1972f84c1d36/Mobility_Plan_2035.pdf.

Mobility Plan 2035 includes the following policies that were adopted for the purpose of avoiding or mitigating an environmental effect and are relevant to the proposed Project:

- **Policy 4.8 Transportation Demand Management (TDM):** Encourage greater utilization of TDM strategies to reduce dependence on single-occupancy vehicles.
- **Policy 5.1 Sustainable Transportation:** Encourage the development of a sustainable transportation system that promotes environmental and public health.
- **Policy 5.2 Vehicle Miles Traveled (VMT):** Support ways to reduce VMT per capita.
- **Policy 5.4 Clean Fuels and Vehicles:** Continue to encourage the adoption of low and zero emission fuel sources, new mobility technologies, and supporting infrastructure.
- **Policy 5.5 Green Streets:** Maximize opportunities to capture and infiltrate stormwater within the City's public rights-of-way.

Noise Element

The Noise Element of the City's General Plan,[21] adopted in 1999, identifies significant noise sources within the City and addresses noise mitigation regulations, strategies, and programs. It also includes discussion of local limitations relative to noise control due to federal or state preemption. The Noise Element specifically addresses airport-related noise associated with LAX. The goal of the Noise Element is a city where noise does not reduce the quality of urban life, and policies are identified for its achievement. The Noise Element includes the following policies that were adopted for the purpose of avoiding or mitigating an environmental effect and are relevant to the proposed Project:

- **Policy 1.1:** Incompatibility of airports identified by the Los Angeles County ALUC as "noise problem airports" (LAX, Van Nuys, and Burbank) and land uses shall be reduced to achieve zero incompatible uses within a CNEL of 65 dB airport noise exposure area, as required by Caltrans pursuant to the California Code of Regulations Title 21, Section 5000, et seq., or any amendment thereto.
- **Program P1:** Continue to develop and implement noise compatibility ordinances and programs that are designed to abate airport-related noise impacts on existing uses, to phase out incompatible uses, and to guide the establishment of new uses within a CNEL of 65 dB noise exposure area of the Los Angeles International and Van Nuys airports and within those portions of the City that lie within a CNEL of 65 noise exposure area of the Burbank-Glendale-Pasadena Airport [Hollywood Burbank Airport].
- **Program P2:** Noise abatement, mitigation, and compatibility measures shall be incorporated into the City's general plan airport and harbor elements, including, where feasible, soundproofing of impacted sensitive uses, buffering, land use reconfiguration, modification of associated circulation and transportation systems, modification of operational procedures, conversion or phasing out of uses that are incompatible with airport or harbor uses, and/or other measures designed to reduce airport- and harbor-related noise impacts on adjacent communities.
- **Program P3:** Continue to incorporate airport and harbor noise compatibility measures into the City's General Plan Community Plan elements for communities that are significantly impacted by airport- and harbor-related noise, including, where feasible, conversion or phasing out of land uses that are incompatible with airport and harbor uses, reclassification of zones, modification of associated circulation systems and/or other measures designed to reduce airport- and harbor-related noise impacts on adjacent communities.

[21] City of Los Angeles, Department of City Planning, *Noise Element of the Los Angeles City General Plan*, adopted February 3, 1999. Available: https://planning.lacity.org/odocument/b49a8631-19b2-4477-8c7f-08b48093cddd/Noise_Element.pdf.

Land Use Element

The Land Use Element of the General Plan is comprised of a series of 35 Community Plans, the LAX Plan, and the Port of Los Angeles Plan. Each of these plans focuses on specific geographies within the City. The Project site is located within the LAX Plan boundary. In addition, the existing noise contours associated with aircraft landing at LAX extend over the South Los Angeles Community Plan area. The following sections identify and describe the Land Use Element plans and policies that were adopted for the purpose of avoiding or mitigating an environmental effect and are relevant to the proposed Project, including the LAX Plan, the Westchester-Playa del Rey Community Plan, and the South Los Angeles Community Plan.

LAX Plan

The LAX Plan, which is the Community Plan for the LAX area and was last amended in 2017, is part of the Land Use Element of the City of Los Angeles General Plan. The LAX Plan establishes land use policies for LAX and is intended to promote an arrangement of airport uses that encourages and contributes to the modernization of the airport in an orderly and flexible manner within the context of the City and region. It provides goals, objectives, policies, and programs that establish a framework for the development of facilities promoting the movement and processing of passengers and cargo within a safe and secure environment, while continuing to serve as the region's principal international gateway. The LAX Plan is intended to allow the airport to respond to emerging new technologies, economic trends, and functional needs.[22]

As described in the LAX Plan, and shown in **Figure 4.6-3**, the LAX Plan area has five general land use subareas: Airport Airside, Airport Landside, Airport Landside Support, LAX Northside, and Open Space, as summarized below.

- The Airport Airside Subarea includes those aspects of passenger and cargo movement that are associated with aircraft operating under power and related airfield support services. Permitted uses include four runways, taxiways, aircraft gates, maintenance areas, airfield operation areas, air cargo areas, passenger handling facilities, fire protection facilities, and other ancillary airport facilities.
- The Airport Landside Subarea functions as the interface between Airport Airside and the regional ground transportation and public transit network, establishing access portals for the processing of people and goods. As stated in the current LAX Plan, this area includes the Central Terminal Area (CTA); ground transportation facilities to the east, including ITFs, the Consolidated Rental Car Facility (CONRAC), and the APM connecting these facilities to the CTA; and airport parking. Aircraft are not permitted under power in this area. Examples of uses within these areas include passenger handling services, airport administrative offices, parking areas, cargo facilities, and other ancillary airport facilities.
- The Airport Landside Support Subarea supports the airport regional ground transportation network and allows for the development of commercial uses meeting the needs of passengers, visitors, and employees of LAX; guests of hotels; and employees of businesses in or around the vicinity. Allowable uses in this area include, but are not limited to, retail, restaurants, entertainment, hotels, and offices.

[22] City of Los Angeles, Department of City Planning, *Los Angeles International Airport - LAX Plan*, adopted December 14, 2004, last amended June 7, 2017. Available: https://www.lawa.org/-/media/lawa-web/lawa-our-lax/plan-and-ordiance/2017-lax-plan.ashx?la=en&hash=A56B9B036C9CC63428A4AC5DC0E910992C1B0F53.



Legend

LAX SPECIFIC PLAN SUBAREAS

- LAX Northside
- Airport Airside
- Airport Landside
- Airport Landside Support
  - Area 1
  - Area 2

LAX/EL SEGUNDO DUNES SPECIFIC PLAN AREA

- Open Space
- Imperial Terminal Area

LA City Boundary

Source: City of Los Angeles, *Los Angeles International Airport - LAX Plan*, adopted December 14, 2004, last amended June 7, 2017
Prepared by: CDM Smith, October 2020

LAX Airfield and Terminal Modernization Project	LAX Plan Map	Figure **4.6-3**

- The LAX Northside Subarea provides for the development of a variety of land uses of an appropriate scale and level of activity to provide a buffer and transition between the Westchester-Playa del Rey community and the airport. It may also serve as a relocation area for businesses displaced by airport development. The primary allowable uses within LAX Northside include, but are not limited to, commercial development, office, light industrial, research and development, hotel and conference facilities, retail and restaurant uses, school and community facilities, open space, bicycle paths, and greenway buffers. The proposed north airfield improvements are located south of the LAX Northside Subarea. No modifications to the LAX Northside Subarea are proposed and this subarea is not addressed further in this EIR.
- The Open Space Subarea is comprised of the Los Angeles Airport/El Segundo Dunes. Development within this subarea is limited to existing and relocated navigational aids, restoration and maintenance of the Dunes Habitat Preserve, a park, and other ancillary facilities per the adopted Los Angeles Airport/El Segundo Dunes Specific Plan. The Los Angeles Airport/El Segundo Dunes Specific Plan Area is located at the far western boundary of LAX. The Los Angeles Airport/El Segundo Dunes lie west of the proposed north airfield improvements across Pershing Drive. The proposed terminal and landside improvements are over 2 miles to the east of the Dunes. No modifications to the Open Space Subarea are proposed and this subarea is not addressed further in this EIR.

The LAX Plan identifies various policies that guide airport development. These policies and programs are organized into nine topics that address functional and operational aspects of the airport and potential impacts to adjacent land uses. These policy topics are safety and security, land use, conservation, circulation and access, economic benefits, noise, air quality, hazardous waste, and design.

The LAX Plan includes the following policies that were adopted for the purpose of avoiding or mitigating an environmental effect and are relevant to the proposed Project:

- **Land Use – Airport Airside P1:** Develop a balanced airfield to provide for more efficient and effective use of airport facilities.
- **Land Use – Airport Landside P1:** Ensure that the scale and activity level of airport facilities appropriately relates to any abutting neighborhood edges.
- **Land Use – Airport Landside P3:** Develop connections between Airport Landside facilities and the regional ground transportation network, defined as major and secondary highways, freeways, and public transit systems.
- **Land Use – Airport Landside P4:** Develop direct links from each major Airport Landside facility to other Airport Landside and Airport Airside facilities.
- **Land Use – Airport Landside P6:** Locate airport uses and activities with the potential to adversely affect nearby land uses through noise, light spill-over, odor, vibration, and other consequences of airport operations and development as far from, or oriented away from adjacent residential neighborhoods as feasible.
- **Conservation – Sustainability P1:** Design new facilities to meet or exceed energy prescriptive standards required under Title 24.
- **Conservation – Sustainability P2:** Reduce energy usage and increase usage of green power at all airport facilities and in all operations.
- **Conservation – Sustainability P3:** Increase recycling and source reduction efforts at all facilities and for all operations.
- **Conservation – Sustainability P4:** Increase water conservation in all airport facilities and for all operations.

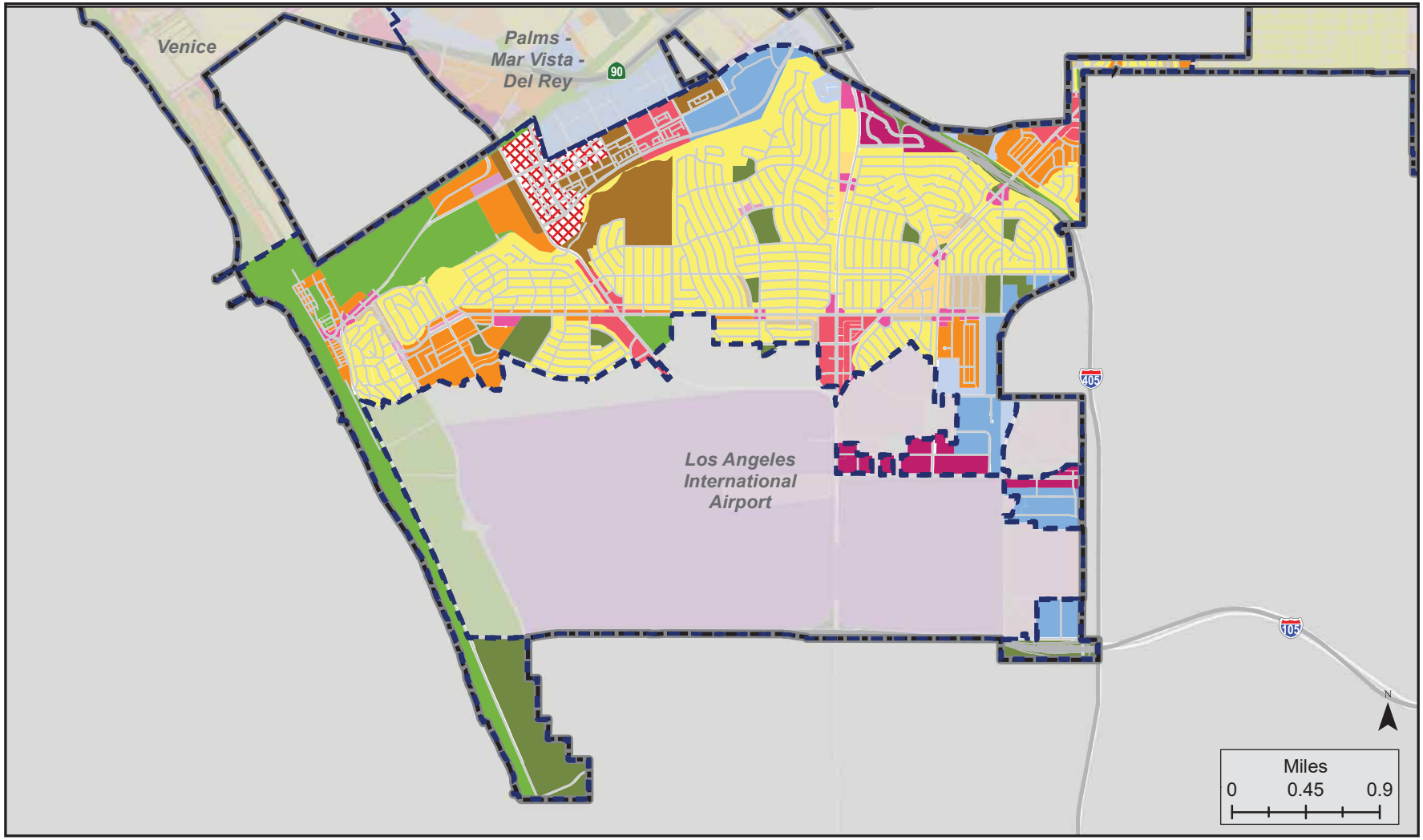
- **Conservation – Sustainability P6:** Incorporate sustainable planning, design, and construction practices into all airport projects.
- **Circulation and Access P1:** Develop direct links from each major Airport Airside and Airport Landside facility to other Airport Landside and Airport Airside facilities, as appropriate.
- **Circulation and Access P2:** Connect airport facilities to, and to the extent feasible, improve the safety, operation, and mobility of, the regional ground transportation network.
- **Circulation and Access P3:** Provide facilities that encourage transit ridership.
- **Circulation and Access P11:** Connect to transit, encouraging transit ridership to LAX.
- **Circulation and Access P14:** Reduce vehicle emissions and improve air quality.
- **Noise P1:** Maintain and enhance applicable elements of the current Aircraft Noise Abatement Program that pertain to aircraft noise.
- **Noise P2:** Update facilities, gates, and runways, to accommodate the New Large Aircraft (NLA) and the next generation of quieter jets.
- **Noise P8:** Continue to implement LAX's Airport [Aircraft] Noise Mitigation Program to mitigate noise impacts to incompatible land uses (residences, schools, hospitals, churches, and libraries).
- **Noise P9:** Locate airport uses and activities with the potential for noise impacts as far from adjacent residential neighborhoods as feasible.
- **Air Quality P1:** Modify runways and taxiways to reduce airfield delays and congestion in order to lessen air [pollutant] emissions through reduced idle time.
- **Air Quality P4:** Provide facilities that encourage transit ridership.
- **Air Quality P5:** Establish land use and traffic circulation patterns that reduce traffic and congestion, thereby reducing automobile idle times and subsequent motor vehicle emissions.
- **Design P1:** Appropriately relate those airport facilities that are adjacent to community land uses to the scale and level of activity of those uses.

Westchester-Playa del Rey Community Plan

The Westchester-Playa del Rey Community Plan includes areas that surround LAX to the west, north, east, and south, as shown in **Figure 4.6-4**. The land uses designated in the Westchester-Playa del Rey Community Plan area consist primarily of residential uses, with commercial uses concentrated near the transportation corridors of Lincoln Boulevard, Sepulveda Boulevard, and Century Boulevard. Industrial land uses are primarily located in the east and southeast sections of the community, close to LAX. Many of the businesses in those areas are closely tied to the aviation industry and include logistics, aircraft repair or part fabrication, food service, and parking lots for car rental agencies and long-term airport parking use.[23]

The Westchester-Playa del Rey Community Plan recognizes the intertwined relationship between LAX and the Westchester Playa del Rey community. One of the stated goals of the Community Plan is to coordinate the development of LAX and its ancillary facilities and circulation system with surrounding communities to increase safety, security, and efficient operational capabilities to serve the passenger travel and air-cargo demand throughout Los Angeles and the region, while minimizing potential adverse environmental impacts resulting from such activities.

[23] City of Los Angeles, Department of City Planning, *Westchester - Playa del Rey Community Plan*, adopted April 13, 2004, amended September 7, 2016. Available: https://planning.lacity.org/odocument/67450916-225a-4a55-97a5-8fa184a7e91d/Westchester-Playa_Del_Rey_Community_Plan.pdf.



Legend

- City Boundary
- Community Plan Boundary
- Low
- Low Medium I
- Low Medium II
- Medium
- High Medium
- General Commercial
- Community Commercial
- Neighborhood Commercial
- Neighborhood Office Commercial
- Regional Commercial
- Regional Mixed Commercial
- Light Industrial
- Light Manufacturing
- Limited Industrial
- Limited Manufacturing
- Open Space
- Public Facilities
- Public Facilities - Freeways
- Airport Landside

0 0.25 0.5 Miles
Scale

Source: City of Los Angeles, Department of City Planning, *Westchester-Playa del Rey Community Plan*, 2004
Prepared by: CDM Smith, October 2020

LAX Airfield and Terminal Modernization Project

Westchester-Playa del Rey Community Plan Land Use Map

Figure **4.6-4**

South Los Angeles Community Plan

The South Los Angeles Community Plan area is located approximately three miles east of LAX. The South Los Angeles Community Plan is within the land use study area because the southern portion of the area is subject to aircraft overflights associated with LAX and a portion of the Plan area falls within the airport's existing 65 CNEL noise contour. The South Los Angeles Community Plan outlines a vision for the long-term physical and economic development and community enhancement of South Los Angeles.[24] The South Los Angeles Community Plan does not contain any policies related to LAX.

City of Los Angeles Zoning, Specific Plans, and Streetscape Plan

LAX Specific Plan

While the LAX Plan establishes a land use policy framework for LAX, the LAX Specific Plan establishes zoning and development regulations and standards consistent with the LAX Plan for the Airport Airside, Airport Landside, Airport Landside Support, and LAX Northside subareas. The LAX Specific Plan is the principal planning tool for achieving the goals and objectives of the LAX Plan and for implementing the Plan's policies and programs.

The LAX Specific Plan, last amended in 2017, contains land use regulations and procedures for the processing of future individual projects and activities under the LAX Plan.[25] **Figure 4.6-5** depicts the LAX Specific Plan area, which is divided into four land use subareas: Airport Airside, Airport Landside, Airport Landside Support, and LAX Northside. The proposed airfield and terminal improvements are located within the Airport Airside Subarea.

The allowed uses in the LAX Specific Plan subareas are generally the same as described above for the LAX Plan, but with additional levels of detail that include items such as design guidelines and standards, development standards (including height and floor area restrictions), trip generation limits, transportation regulations, and sign regulations. Projects within the LAX Specific Plan must be reviewed and approved for consistency with the LAX Plan. In addition, any activity within the LAX Specific Plan area is required to comply with the applicable Design Guidelines.

Coastal Transportation Corridor Specific Plan

The Coastal Transportation Corridor Specific Plan (CTCSP), as amended,[26] implements a transportation impact mitigation program in the area generally bound by the City of Santa Monica to the north, I-405 to the east, Imperial Highway to the south, and Pacific Avenue and Vista del Mar to the west. LAX is included in the Specific Plan area. The CTCSP established a Transportation Impact Assessment fee program that is used to fund various improvements to the transportation system within the Specific Plan area. The CTCSP purposes include:

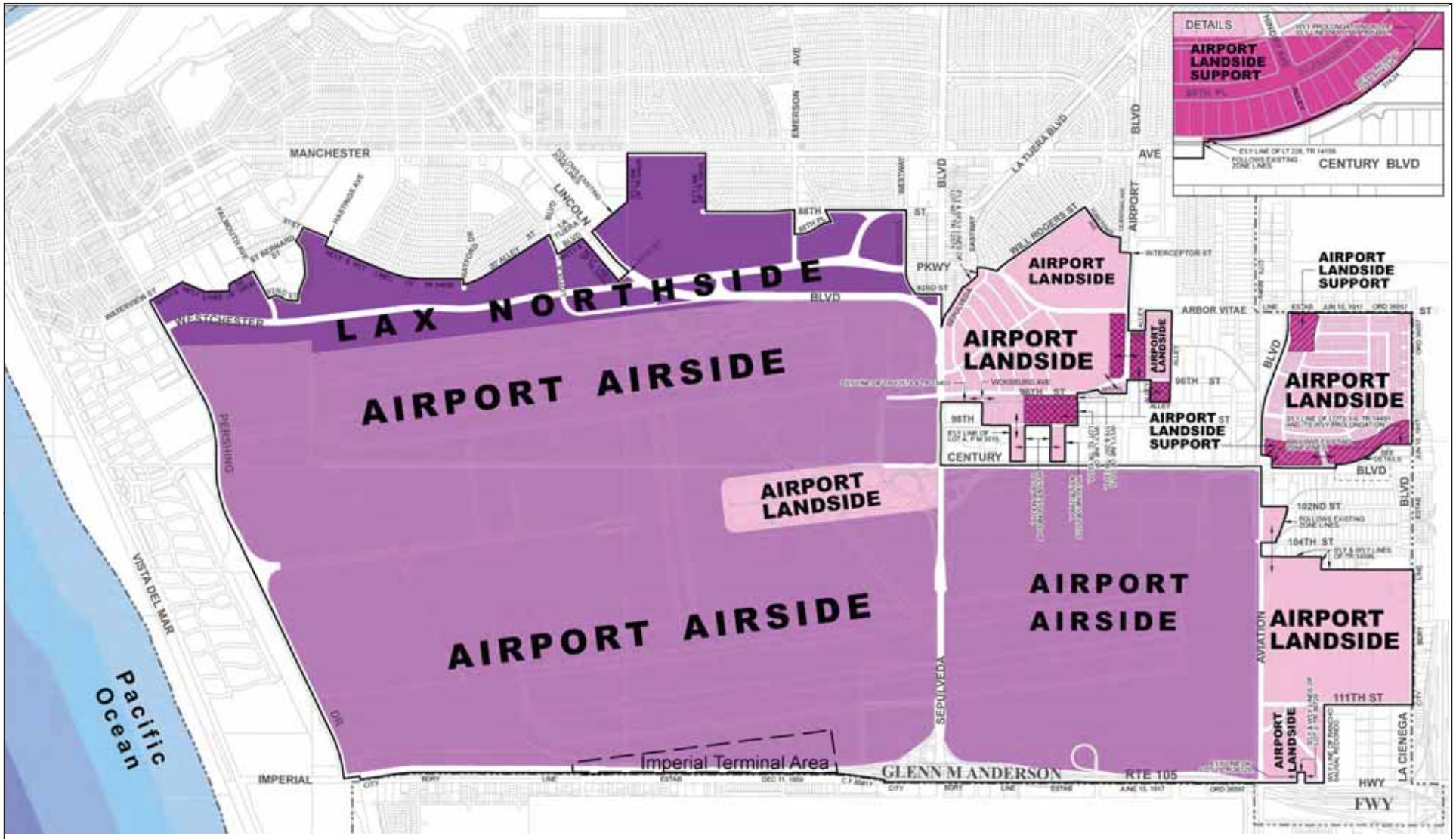
- Produce fewer auto trips per capita and decrease vehicle miles traveled per capita by increasing multi-modal transportation options and promoting best practices in Transportation Demand Management (TDM)
- Enhance mobility and connectivity along key transportation corridors

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[24] City of Los Angeles, Department of City Planning, *South Los Angeles Community Plan*, adopted November 22, 2017. Available: https://planning.lacity.org/odocument/b909e749-754e-4caa-af7f-14c82adaa2b7/South_Los_Angeles_Community_Plan.pdf.

[25] City of Los Angeles, Department of City Planning, *Los Angeles International Airport (LAX) Specific Plan*, adopted December 14, 2004, last amended September 8, 2017. Available: https://lawamediastorage.blob.core.windows.net/lawa-media-files/media-files/lawa-web/lawa-our-lax/our-lax/17-0276-s2_ord_185164_10-28-17.pdf.

[26] City of Los Angeles, *Coastal Transportation Corridor Specific Plan*, June 28, 2019. Available: https://planning.lacity.org/plans-policies/overlays/coastal-transportation-corridor.



0 0.25 0.5 Miles

Scale

Source: City of Los Angeles, Department of City Planning, *Los Angeles International Airport (LAX) Specific Plan*, adopted December 14, 2004, last amended September 8, 2017
Prepared by: CDM Smith, October 2020

Legend

- LAX Northside
- Airport Airside
- Airport Landside
- Airport Landside Support
- LAX Specific Plan Boundary
- LA City Boundary
- Area 1
- Area 2

LAX Airfield and Terminal Modernization Project	LAX Specific Plan Map	Figure **4.6-5**

Century Boulevard Streetscape Plan

The Century Boulevard Streetscape Plan (Streetscape Plan), located within the LAX Plan and Westchester-Playa del Rey Community Plan areas, provides guidelines and standards for streetscape improvements in the public right-of-way and on private properties along an approximately 1.5-mile segment of Century Boulevard between Sepulveda Boulevard on the west and La Cienega Boulevard on the east.[27] This portion of the corridor is considered to be the "Gateway to Los Angeles" due to the millions of annual passengers that access LAX via Century Boulevard from Interstate 405 (I-405, also known as the San Diego Freeway) and adjacent arterials. The Streetscape Plan was adopted in 2018 and is designed to enhance walkability, make aesthetic enhancements, and create street-front business opportunities in the area.

The Streetscape Plan identifies various streetscape elements that are to be incorporated into applicable projects along this section of Century Boulevard, including street trees, planting in the parkways/tree wells, pedestrian lighting, paving patterns and materials, and street furniture. Implementation of the improvements identified in the Streetscape Plan is accomplished by private property owners along the corridor through the entitlement process, in conjunction with the permitting of other improvements, including developments or map approvals.

The Century Boulevard Streetscape Plan identifies the following goal that was adopted for the purpose of avoiding or mitigating an environmental effect and is relevant to the proposed Project:

- **Goal:** Incorporate "Green Streets" principles and design techniques along the corridor. These principles will allow for more sustainable management of stormwater runoff by infiltrating the runoff into the ground or filtering out pollutants before allowing the runoff to flow into the storm drains and ultimately, the Santa Monica Bay.

4.6.3.1.3 Plans of Other Jurisdictions within the Study Area

Although the proposed Project would not include components that are physically located within the boundaries of adjacent jurisdictions, unincorporated areas within the County of Los Angeles, and portions of the City of El Segundo and the City of Inglewood lie within the airport's existing 65 CNEL noise contour and are included within the land use study area. The General Plans of these jurisdictions contain policies regarding LAX. However, because the land use plans for these communities do not have jurisdiction over airport land, the goals and policies are designed to be responsive to airport development and operations within their jurisdictional boundaries and not to control airport development or operations.

City of El Segundo

The City of El Segundo lies immediately south of LAX. The El Segundo General Plan Noise Element, last updated in 1992, identifies flight operations at LAX as a major source of noise in the city, and contains land use policies responsive to LAX-related noise.[28]

City of Inglewood

The City of Inglewood is located to the east of LAX and portions of the City lie directly under the airport approach paths. The City's General Plan Noise Element, adopted in 1987, is a comprehensive program for including noise control in the planning process.[29] The Noise Element identifies aircraft operations as a

[27] City of Los Angeles, *Century Boulevard Streetscape Plan*, May 21, 2018. Available: https://planning.lacity.org/plans-policies/overlays/century-boulevard.

[28] City of El Segundo, *El Segundo General Plan – 1992, Noise Element*. Available: https://elsegundo.org/depts/planningsafety/planning/general_plan/9noise.htm.

[29] City of Inglewood, *Noise Element of the General Plan for the City of Inglewood*, adopted September 1, 1987. Available: https://www.cityofinglewood.org/209/General-Plan.

predominant source of noise in the City, and contains policies designed to reduce land use noise conflicts within the City of Inglewood.

County of Los Angeles General Plan Area Plans

The Los Angeles County General Plan is the foundational document for all community-based plans that serve the unincorporated areas. The General Plan identifies 11 Planning Areas, of which two are located near LAX: the Metro Planning Area and the South Bay Planning Area. Within these two Planning Areas, there are three unincorporated communities located near or in the vicinity of LAX, including Lennox, which is located directly east of the south airfield; Del Aire, which is located to the south/southeast; and Westmont, which is located east of the City of Inglewood but is situated under the LAX flight path. The Los Angeles County General Plan identifies the relationship between LAX noise contours and these communities and contains several policies that address aircraft noise.[30]

4.6.3.2 Environmental Setting

LAX is bordered on the north by the City of Los Angeles communities of Westchester and Playa del Rey, on the south by the City of El Segundo, on the southeast by the unincorporated Los Angeles County community of Del Aire, and on the east by the City of Inglewood and the unincorporated Los Angeles County community of Lennox. Vista del Mar, Dockweiler State Beach, and the Santa Monica Bay are located to the west of LAX. All of these cities and communities are located within Los Angeles County. **Figure 4.6-6** shows the existing land uses in the Project area.

4.6.3.2.1 Project Area

The Project area describes the physical limits of work for the proposed Project, as shown in Figure 2-3 in Chapter 2, *Description of the Proposed Project*. The study area (as described in Section 4.6.2, *Methodology*) defines the geographic area within which the proposed Project may have a potential direct or indirect environmental effect; the Project area is smaller than the study area and defines the area within which the proposed Project would be physically constructed. This section describes the existing land uses in the Project area.

Existing Land Uses

The land uses in the Project area are characterized by airport operations with commercial uses along Sepulveda Boulevard and Century Boulevard; and commercial uses, a Los Angeles Community College District warehouse/educational facility, and vehicle parking (surface and structured parking) along 96th Street, 98th Street, and Vicksburg Avenue. Existing land uses within the footprint of each Project component are described below.

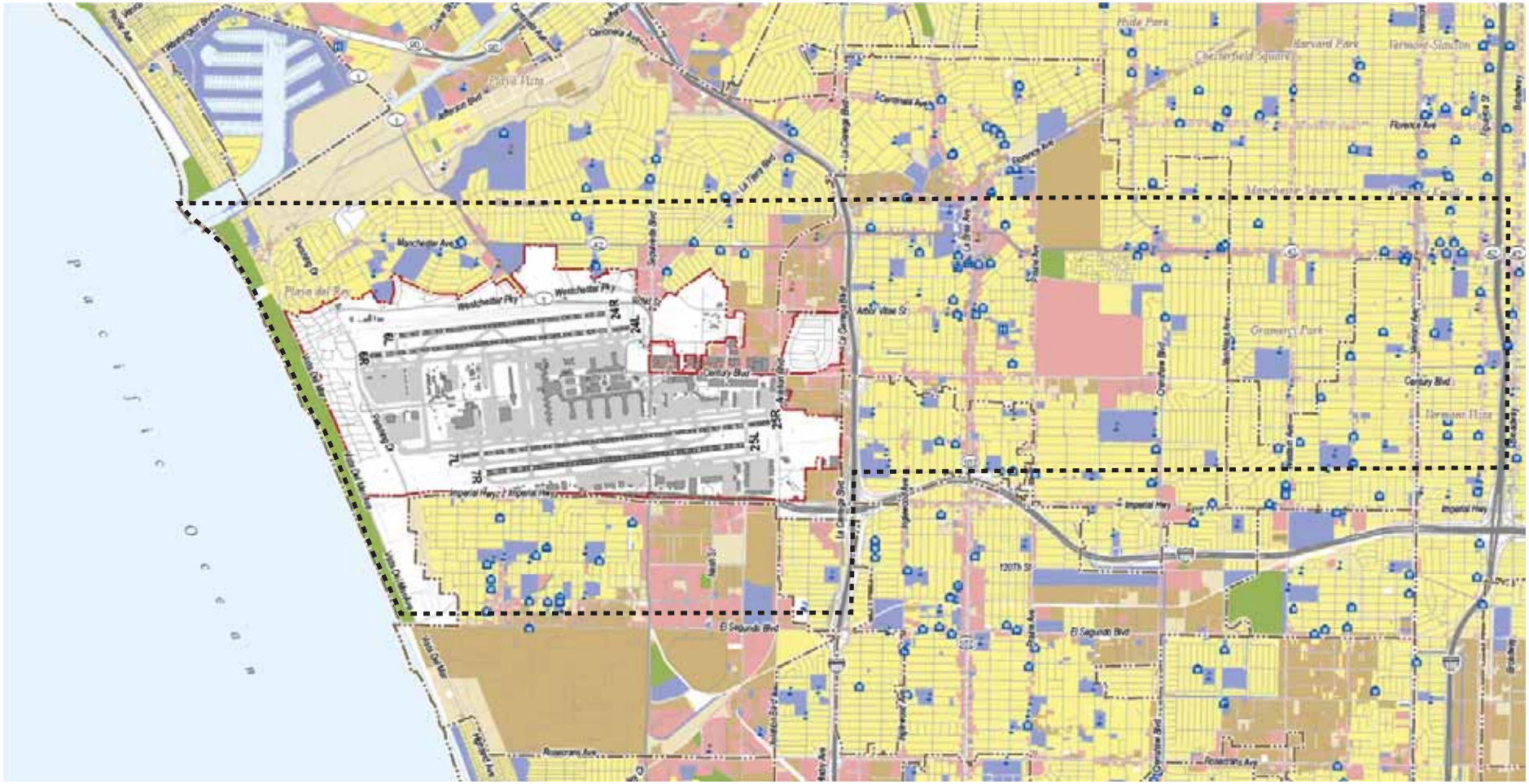
Airfield Improvements

The proposed airfield improvements are situated within the airport's north airfield, which includes runways, paved airfield areas, airfield access roadways, remote gates, and other aviation-related uses, such as maintenance facilities and fuel storage facilities. All proposed airfield improvements would be located on land zoned LAX and within the Airport Airside Subarea.

Terminal Improvements - Concourse 0

The Concourse 0 site is located on airport property and houses airport-related land uses. The site is primarily occupied by LAX-it, a temporary passenger pick-up area for taxis and transportation network companies (e.g., Uber and Lyft). The northern portion of the Concourse 0 site includes the existing LAWA

[30] County of Los Angeles, *Los Angeles County General Plan*, October 6, 2015. Available: http://planning.lacounty.gov/generalplan/generalplan.



Source: Harris Miller Miller & Hanson, February 2020
Prepared by: CDM Smith, October 2020

LAX Airfield and Terminal Modernization Project	Existing Land Uses in the Study Area	Figure **4.6-6**

Police Headquarters building, a vehicle service road, an airport security post, and roads. The LAWA Police Headquarters is currently in the process of being relocated to LAX Northside. The existing Headquarters is expected to close prior to the development of the proposed Project. A small portion of the site houses a groundwater remediation system to address past contamination beneath the site. The Concourse 0 site is zoned LAX and is within the Airport Airside Subarea.

Terminal Improvements - Terminal 9

The Terminal 9 site, including the related airfield improvement area, is located on airport property with land uses that are exclusively airport-related. The site encompasses existing and recently-decommissioned air cargo and maintenance facilities (including the former Delta Air Lines Maintenance Facility and Ground Support Equipment [GSE] Building, Mercury Air Cargo Facility, and Air Freight Building No. 8, and Air Freight Building No. 10), the LAX Records Retention Building, an American Eagle commuter terminal, and an office building. Other airport-related uses, including the United Airlines Maintenance Operations Center, are located in the vicinity. The Terminal 9 site is zoned LAX and is within the Airport Airside Subarea.

Landside Improvements

The proposed landside improvements would be located proximate to several hotels (including the Hyatt Regency Los Angeles, H Hotel/Homewood Suites, Courtyard by Marriott, and Sheraton Gateway Los Angeles), surface and structured parking facilities, a taxi staging lot on airport property, a City of Los Angeles Department of Water and Power (LADWP) electrical substation, and a Los Angeles Community College warehouse property that is used for occasional classes. With the exception of the taxi staging lot, these uses are located on non-airport property. Many of the proposed roadways and roadway improvements would be within existing or future roadway rights-of-way. However, some of the proposed improvements are located on or over parcels that are currently used for surface parking or taxi staging (see Figure 2-26b and Table 2-5 in Chapter 2, *Description of the Proposed Project)*. Even though they are mostly on private property, with the exception of the Los Angeles Community College District parcel, the affected parcels are within the boundaries of the LAX Plan and LAX Specific Plan. These parcels are zoned LAX and designated Airport Landside. The Los Angeles Community College District parcel is zoned C2-2 and is designated for regional commercial uses in the Westchester-Playa del Rey Community Plan.

4.6.3.2.2 Surrounding Area

The following describes the existing land use setting in communities and jurisdictions surrounding the Project area, as shown in Figure 4.6-1. These communities and jurisdictions include portions of the City of Los Angeles, the City of El Segundo, the City of Inglewood, and unincorporated Los Angeles County.

City of Los Angeles

The City of Los Angeles community of Playa del Rey lies to the north of the western portion of LAX. Existing uses include residential development and community-serving uses like schools, beachfront parks, and the Ballona Wetlands. The southerly portion of Playa del Rey lies within the existing 65 CNEL noise contour of LAX's north airfield.

The City of Los Angeles community of Westchester is adjacent to the Project boundary. Existing uses located in proximity to the proposed improvements include high-rise hotels and office buildings, parking lots and structures, and other uses that support these industries. A small portion of Westchester falls within the existing 65 CNEL noise contour of LAX's north airfield.

The City of Los Angeles community of South Los Angeles lies approximately three miles east of LAX. Portions of South Los Angeles – including Gramercy Park and the area to the north – lie within the existing 65 CNEL noise contour of LAX's north airfield. The portions of the community within the existing 65 CNEL

noise contour consist predominantly of residential land uses and community-serving uses such as schools, with some commercial development.

City of El Segundo

The City of El Segundo is approximately 3,494 acres in size[31] and is located adjacent to and south of the airport. Existing uses in El Segundo nearest to the airport (south of Imperial Highway) include office, commercial, and industrial development towards the east, and commercial and residential uses towards the west. The northwesternmost portion of the City, as well as some of the commercial uses along the northeastern boundary of the City, lie within the existing LAX south airfield 65 CNEL noise contour.

City of Inglewood

The City of Inglewood is located east of the airport and covers approximately 5,800 acres. Existing land uses in the City include a mix of residential, commercial, and industrial uses. Commercial and industrial land uses are located along major corridors, such as Century Boulevard east of I-405. Residential and mixed-use developments are generally located between major corridors, with multi-family residential uses located primarily west of Crenshaw Boulevard and single-family uses located primarily east of Crenshaw Boulevard. The Forum, a multi-purpose indoor arena, is located on Prairie Avenue, between Manchester and Century Boulevards. The Hollywood Park Tomorrow Mixed-Use Development, which consists of the redevelopment of the 238-acre former Hollywood Park racetrack, is located adjacent to the Forum and will consist of residential, retail, office, commercial, hotel, and community-serving uses, as well as a new sports stadium and entertainment complex, currently under construction. The existing 65 CNEL noise contours for both the north and south airfields lie within the City of Inglewood boundaries.

County of Los Angeles

The community of Lennox is located east of the airport within unincorporated Los Angeles County. Land uses in the western part of Lennox (between La Cienega Boulevard and I-405) include manufacturing and commercial development. Residential land uses are located east of the I-405 Freeway, with commercial uses along major north-south corridors. A large portion of Lennox lies within the south airfield 65 CNEL noise contour.

The unincorporated community of Del Aire is approximately 650 acres in size and is located south of the airport and east of El Segundo. Existing land uses within Del Aire near I-105 and I-405 include residential, industrial, and commercial development.

The unincorporated community of Westmont is approximately 1,180 acres in size and is located east of the City of Inglewood. Land uses are predominantly residential with some community-serving uses such as schools. A small area in Westmont lies within the existing south airfield 65 CNEL noise contour.

4.6.4 Thresholds of Significance

A significant land use impact would occur if the proposed Project would:

Threshold 4.6-1 Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

This threshold is from Appendix G of the State CEQA Guidelines. Per Appendix G of the State CEQA Guidelines, the plan consistency evaluation considers potential conflicts or inconsistencies between the proposed Project and existing land use plans, policies, and regulations that were adopted for the purpose

[31] City of El Segundo, *El Segundo General Plan – 1992, 1.0 Introduction*. Available: https://elsegundo.org/depts/planningsafety/planning/general_plan/1intro.htm.

of avoiding or mitigating environmental effects. Determinations of significance are not based on inconsistency alone, but on instances where inconsistencies with plans, policies, and regulations would result in physical impacts to the environment.

As discussed above in Section 4.6.2, a project is considered to be consistent with a general plan and related planning documents if, considering all of its aspects, it will meet the general intent of the plan, further the objectives and policies of the plan, or not obstruct their attainment. A given project need not be in perfect conformity with each and every policy, nor does state law require precise conformity of a proposed project with every policy or land use designation for a site. If a project is determined to be inconsistent with specific individual objectives or policies, but is largely consistent with the land use or the other goals and policies of that plan and would not preclude the attainment of the primary intent of the land use plan, the project would not be considered inconsistent with the plan.

4.6.5 Project Impacts

The following sections analyze the potential environmental effects of construction and operation of the proposed Project on land use. The analysis evaluates potential impacts by assessing whether the proposed Project is consistent with relevant existing land use plans, policies, or regulations that were adopted for the purpose of avoiding or mitigating an environmental effect.

4.6.5.1 Impact 4.6-1

Summary Conclusion for Impact 4.6-1: Implementation of the proposed Project would not cause a significant environmental impact due to a conflict with land use plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect. This would be a *less than significant impact* for construction and operations.

4.6.5.1.1 Consistency with Regional Plans

SCAG 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy (Connect SoCal) Consistency

The 2020-2045 RTP/SCS reflects the region's commitment to improve its mobility, sustainability, and economy. The proposed Project is an aviation transportation improvement project that is designed to enhance efficiency and safety within the north airfield, provide new terminal facilities to upgrade passenger processing capabilities and enhance the passenger experience, and improve the system of roadways to better access the CTA and new facilities while reducing congestion. The improvements would accommodate future aviation demand at LAX, which is supportive of the economic health of the region. Thus, the proposed Project is consistent with the 2020-2045 RTP/SCS overall goals.

Mobility in the vicinity of airports is an important component of sustainability and integrated planning in the 2020-2045 RTP/SCS. The proposed Project would be consistent with the overall intent of the 2020-2045 RTP/SCS, as it would provide ground access improvements that support the plan's goals as shown in **Table 4.6-1** below. The ground access improvements would also directly support the 2020-2045 RTP/SCS aviation strategy, which focuses on facilitating airport access to improve the functioning of the aviation system overall. In addition, the proposed Project would be consistent with the aviation forecast for LAX in the 2020-2040 RTP/SCS. As noted in Section 4.6.3.1.1, the 2020-2045 RTP/SCS forecasts an activity level of up to 127 MAP at LAX in the planning horizon year (i.e., 2045). Activity levels at LAX are forecasted to be 111 MAP in 2028. These activity levels are within the activity levels identified in the 2020-2045 RTP/SCS. As shown in Table 4.6-1, the proposed Project would not be inconsistent with the 2020-2045 RTP/SCS overall nor with policies in the 2020-2045 RTP/SCS that were adopted for the purpose of avoiding or mitigating an environmental effect. Therefore, impacts associated with the 2020-2045 RTP/SCS would be ***less than significant***.

Table 4.6-1
Project Consistency with Applicable Goals in the 2020–2045 Regional Transportation Plan/Sustainable Communities Strategy (Connect SoCal)

Goal	Plan Inconsistency?
Goal 5: Reduce greenhouse gas emissions and improve air quality	No inconsistency. As indicated in Section 4.1.1, *Air Quality*, and Section 4.4, *Greenhouse Gas Emissions,* the proposed Project would result in increased GHG emissions and impacts to air quality. However, a large portion of GHG and air quality impacts would be related to increased aircraft activity that will occur with or without Project implementation, although impacts due to construction, vehicle trips by Project-related employees, and building equipment would be attributable to the Project. As discussed in Section 4.4, *Greenhouse Gas Emissions,* LAWA does not have authority to regulate aircraft operations or emissions from aircraft engines. Moreover, the forecasted activity levels that would result in aircraft operations-related air pollutant and GHG emissions at LAX are accounted for in SCAG's 2020-2045 RTP/SCS. Although LAWA does not have the authority to regulate aircraft operations or emissions from aircraft engines, the proposed Project would result in changes at LAX, including the proposed airfield improvements, terminal gate configurations, and the substantial decommissioning of the West Remote Gates, that would result in decreased air pollutant and GHG emissions. Thus, the Project would not be inconsistent with Goal 5. While the proposed Project would still result in significant impacts under the applicable air quality and GHG thresholds, as outlined in Sections 4.1.1 and 4.4, the proposed Project includes mitigation measures to address air quality and GHG impacts.
Goal 7: Adapt to a changing climate and support an integrated regional development pattern and transportation network	No inconsistency. The proposed Project would support an integrated regional development pattern and transportation network by adding a new APM station serving Terminal 9. Connecting to the APM would support the goal by ensuring that the development of Terminal 9 is connected to the regional transportation network via the APM. The proposed Project would not be inconsistent with the goal of adapting to a changing climate. All Project-related on-road medium- and heavy-duty vehicles at LAX would comply with LAWA's Alternative Fuel Vehicle Requirement. In addition, airlines that operate GSE related to Concourse 0 and Terminal 9 would comply with LAWA's GSE Emissions Policy, which would reduce GHG emissions. Moreover, the new Concourse 0 and Terminal 9 would be designed to achieve the USGBC's LEED® Silver certification and construction vehicles and equipment would comply with LAWA's Design and Construction Handbook requirements pertaining to clean equipment. Thus, the Project would not be inconsistent with Goal 5. In addition, as noted above and outlined in Section 4.4, *Greenhouse Gas Emissions,* the proposed Project includes mitigation measures that would reduce GHG emissions, which would aid the airport in adapting to climate change.

Source: Southern California Association of Governments, *Connect SoCal: The 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy of the Southern California Association of Governments,* adopted September 3, 2020. Available: https://www.connectsocal.org/Documents/Adopted/0903fConnectSoCal-Plan.pdf.

Prepared by: EnviCraft LLC, 2020.

Los Angeles County Airport Land Use Plan Consistency

As described in Section 4.6.3.1.1, the ALUP for Los Angeles County provides policies for proposed new development to protect public health and minimize the public's exposure to safety hazards and excessive noise related to the operation of LAX. The proposed airfield improvements would be designed in conformance with FAA safety requirements. The reconfigured runway exits from Runway 6L-24R would be located outside of the high-energy zone and would include new acute-angled exits that would improve pilot visibility, thereby improving the safety of aircraft operations. The proposed Project would also be designed to avoid the creation of any obstructions or hazards as defined by Federal Aviation Regulation (FAR) Part 77 and would be consistent with ALUP policies that address RPZs and limit uses within these zones. Although some of the proposed roadway improvements would be situated within the eastern RPZ for Runway 6R-24L, these improvements would be at-grade (i.e., would not penetrate Part 77 surfaces) and would primarily replace and/or alter existing roadways.

The proposed Project would not conflict with the general and noise-related policies of the ALUP. These policies focus on ensuring that new development in areas surrounding the airport is compatible with airport operations, encouraging the land recycling of incompatible uses, and encouraging local agencies to inform prospective property owners of aircraft noise exposure in areas where high noise levels exist or are anticipated. Although some areas would be newly exposed to high noise levels, LAWA would continue to adhere to the guidelines of the California Airport Noise Standards and make progress towards achieving full compatibility of all eligible land uses affected by aircraft noise under LAWA's Aircraft Noise Mitigation Program (ANMP), in compliance with ALUP policy. Based on the above, the proposed Project would not be inconsistent with the policies of the ALUP that were adopted for the purpose of avoiding or mitigating an environmental effect. Therefore, impacts associated with the ALUP would be ***less than significant***.

4.6.5.1.2 Consistency with City of Los Angeles Plans

City of Los Angeles General Plan

Framework Element Consistency

The Framework Element includes primary land use objectives that accommodate land use decisions that support existing and future business needs of the City, and plan for the provision of adequate supporting transportation and utility infrastructure. The proposed Project is intended to support and accommodate the business and transportation needs of the City of Los Angeles. In addition, the proposed landside access improvements are intended to reduce traffic congestion within the airport's CTA and on surrounding roadways. As shown in **Table 4.6-2** below, the proposed Project is supportive of the policies in the Framework Element by maintaining the basic relationship among land use districts and expanding transportation infrastructure at LAX in an environmentally sound manner. As shown in Table 4.6-2, the proposed Project would not be inconsistent with applicable policies of the General Plan Framework Element that were adopted for the purpose of avoiding or mitigating an environmental effect. Therefore, impacts associated with the City of Los Angeles General Plan Framework Element would be ***less than significant***.

Table 4.6-2
Project Consistency with Applicable Policies in the General Plan Framework Element

Policy	Plan Inconsistency?
Land Use Policy	
Policy 3.10.2: Accommodate and encourage the development of multi-modal transportation centers, where appropriate.	No inconsistency. The proposed Project includes improvements that would support the multi-modal capability of the airport, including a new station and terminal connection to the APM, which would provide connectivity to ITF West and the Airport Metro Connector, which are multi-modal centers.
Economic Development Policies	
Policy 7.2.13: Facilitate environmentally sound operations and expansion of the Port of Los Angeles and the Los Angeles International Airport as major drivers of the local and regional economy.	No inconsistency. The proposed airfield improvements would enhance safety and improve the operational management of aircraft movements in the north airfield. The proposed terminal improvements would replace remote gates with contact gates that are located within the CTA, reduce busing of passengers and upgrade the passenger experience. The proposed landside access improvements would have greater queuing capacity than the existing roadway system, which would improve through traffic conditions in the surrounding transportation network. These improvements would facilitate environmentally sound operations and would have local and regional economic benefits by improving airport access and operational management, providing increased terminal amenities and concessions, and reducing congestion on surrounding roadways.
Policy 7.3.4: Recognize the crucial role that the Port of Los Angeles and the Los Angeles International Airport play in future employment growth by supporting planned Port and Airport expansion and modernization that mitigates its negative impacts.	No inconsistency. The proposed Project includes airfield, terminal, and landside improvements that would accommodate forecasted growth in aviation demand and activity and would provide for future employment growth at LAX. The proposed Project would also include mitigation measures that would reduce or avoid adverse impacts, as discussed in this EIR.
Infrastructure and Public Services Policies	
Policy 9.9.7: Incorporate water conservation practices in the design of new projects so as to not impede the City's ability to supply water to its other users or overdraft its groundwater basins.	No inconsistency. As discussed in Section 4.9.1, *Water Supply*, Concourse 0 and Terminal 9 would provide infrastructure to allow the use of reclaimed water in restrooms for toilet flushing and would include water conservation devices (e.g., high water efficiency appliances and restroom fixtures) throughout the facilities. Landscaping would incorporate water-efficient irrigation systems and utilize drought-tolerant plants and materials. As identified in Section 4.9.1, *Water Supply,* and **Appendix H**, *Water Supply Assessment,* the City will be able to supply water to the proposed Project without impeding the City's ability to supply water to its other users or overdraft its groundwater basins. Thus, the proposed Project would not be inconsistent with Policy 9.9.7. In addition to the Project features listed above, as identified in Section 4.4, *Greenhouse Gas Emissions,* Mitigation Measure MM-GHG (ATMP)-5 would further incorporate water conservation practices by requiring the use of non-potable water for Project-related landscaping.

Source: City of Los Angeles, Department of City Planning, *The Citywide General Plan Framework – An Element of the City of Los Angeles General Plan*, December 11, 1996, re-adopted August 8, 2001. Available: https://planning.lacity.org/cwd/framwk/chapters/00/00.htm.

Prepared by: EnviCraft LLC, 2020.

Mobility Plan 2035 Consistency

The proposed Project would improve the landside transportation system serving LAX, thereby improving access to and from the airport and relieving congestion on surrounding roadways. The proposed ground

access improvements include new arrival and departure roadways and a nearby parking facility to support Terminal 9, along with new roadway segments that would improve vehicle access to, and egress from, the existing CTA and Terminal 9. The landside improvement plan would also include construction of a seventh APM station at Terminal 9 on the previously-approved LAX APM line, as well as construction of a pedestrian corridor between Terminals 8 and 9 that would bridge across Sepulveda Boulevard. The reconfigured CTA access roadways would have greater queuing capacity than the existing CTA access roadways, which would lessen the potential for vehicular congestion to occur on Century Boulevard and Sepulveda Boulevard, thereby improving traffic conditions on the surrounding roadway network. This is consistent with the overall aim of the Mobility Plan 2035 to achieve a transportation system that balances the needs of all road users. As shown in **Table 4.6-3**, the proposed Project would not be inconsistent with applicable policies of the Mobility Plan 2035 that were adopted for the purpose of avoiding or mitigating an environmental effect.[32] Therefore, impacts associated with Mobility Plan 2035 would be ***less than significant***.

Table 4.6-3
Project Consistency with Applicable Policies in the Mobility Plan 2035

Policy	Plan Inconsistency?
Collaboration, Communication & Informed Choices	
Policy 4.8 Transportation Demand Management (TDM) Strategies: Encourage greater utilization of TDM strategies to reduce dependence on single-occupancy vehicles.	No inconsistency. As described in Section 4.8, *Transportation,* the proposed Project would not conflict with nor prohibit TDM strategies or otherwise impede increased TDM strategy utilization, and would not be inconsistent with Policy 4.8. While the proposed Project would result in significant impacts related to transportation, as outlined in Section 4.8, *Transportation*, the proposed Project's Mitigation Measure MM-T (ATMP)-1 includes TDM strategies addressing employee travel that would add to, and complement, the TDM programs currently being implemented by LAWA, including strategies that would reduce dependence on single-occupancy vehicles. Employee impacts, relative to VMT and the application of TDM measures, would be mitigated to a level that is less than significant.
Clean Environments & Healthy Communities	
Policy 5.1 Sustainable Transportation: Encourage the development of a sustainable transportation system that promotes environmental and public health.	No inconsistency. The proposed Project would enhance the sustainable ground transportation infrastructure for the airport that is currently being implemented as part of the LAX Landside Access Modernization Program by adding a new APM station.
Policy 5.2 Vehicle Miles Traveled (VMT): Support ways to reduce VMT per capita.	No inconsistency. As described in Section 4.8, *Transportation,* VMT per employee with implementation of the proposed Project would be more efficient than under existing (2019) conditions (and more efficient than under the Projected Future Conditions Baseline in 2028). Specifically, the Project would result in 23.9 VMT per employee (compared to 25.2 under existing conditions and 24 VMT under future without project conditions). Thus, the proposed Project would not be inconsistent with Policy 5.2. While the proposed Project would still result in a significant impact under the applicable transportation threshold because the decrease in employee VMT would not be at least 15 percent below the 24 VMT baseline, the Project includes a mitigation

[32] The Mobility Plan 2035 includes many policies that do not apply, or only marginally apply to the proposed Project, as the Mobility Plan 2035 focuses on addressing mobility issues citywide, rather than LAX-specific mobility policies.

Table 4.6-3
Project Consistency with Applicable Policies in the Mobility Plan 2035

Policy	Plan Inconsistency?
	measure (MM-T (ATMP)-1. VMT Reduction Program) to reduce VMT, including employee VMT per capita as well as total passenger VMT, as discussed in this EIR. Also, note that, as described in Section 4.8, *Transportation*, for purposes of this EIR, passenger VMT is not measured on a per capita basis, but rather measured in terms of total VMT.
Policy 5.4 Clean Fuels and Vehicles: Continue to encourage the adoption of low and zero emission fuel sources, new mobility technologies, and supporting infrastructure.	No inconsistency. All operators of on-road (street-licensed) medium- and heavy-duty vehicles at LAX, including all airport contractors, lessees, permittees, and licensees, would comply with LAWA's Alternative Fuel Vehicle Requirement. This requirement would apply to contractors, lessees, permittees, and licensees of Concourse 0 and Terminal 9 once they are operational. In addition, airlines that operate GSE related to Concourse 0 and Terminal 9 would comply with LAWA's GSE Emissions Policy, which requires GSE operators to reach average composite emissions factors for their GSE fleets. LAWA would also comply with existing municipal code sections related to the provision of EV charging infrastructure. Thus, the proposed Project would not be inconsistent with Policy 5.4. In addition to the Project features listed above, as outlined in Section 4.1.1, *Air Quality*, and Section 4.4, *Greenhouse Gas Emissions,* the Project includes mitigation measures pertaining to clean fuels and vehicles, including low and zero emission fuel sources [e.g., renewable diesel], new mobility technologies [updates to the LAX Electric Vehicle - EV - purchasing policy], and provision of additional EV charging infrastructure beyond that required by code, as discussed in this EIR.
Policy 5.5 Green Streets: Maximize opportunities to capture and infiltrate stormwater within the City's public rights-of-way.	No inconsistency. The street-level roadway improvements would comply with the City's Low Impact Development (LID) and Standard Urban Stormwater Mitigation Plan (SUSMP) requirements, which provide for stormwater capture and infiltration, where feasible and appropriate.

Sources: City of Los Angeles, Department of City Planning, *Mobility Plan 2035 - An Element of the General Plan*, amended September 7, 2016. Available: https://planning.lacity.org/odocument/523f2a95-9d72-41d7-aba5-1972f84c1d36/Mobility_Plan_2035.pdf; City of Los Angeles, Los Angeles World Airports, *Alternative Fuel Vehicle Requirement Program (LAX Only)*, October 16, 2017. Available: https://www.lawa.org/-/media/lawa-web/environment/files/altfuelvehreq.ashx; City of Los Angeles, Los Angeles World Airports, *LAX Alternative Fuel Vehicle Requirement – Frequently Asked Questions (FAQs)*, February 6, 2018. Available: https://www.lawa.org/-/media/lawa-web/environment/files/alt-fuel-faqs-2-06-18.ashx; City of Los Angeles, Los Angeles World Airports, *Ground Support Equipment Emissions Policy*, October 22, 2019. Available: https://www.lawa.org/-/media/lawa-web/environment/files/lax_gse_emission_reduction_policy_boac.ashx.

Prepared by: EnviCraft LLC, 2020.

Noise Element Consistency

The forecast for LAX projects an increase in airport operations by 2028 (with or without implementation of the proposed Project), which would result in increased flights and aircraft noise, as discussed in Section 4.7.1, *Aircraft Noise*. However, as shown in **Table 4.6-4**, the proposed Project would not be inconsistent with the applicable programs and policies of the Noise Element of the General Plan. Specifically, the proposed Project would be consistent with policies requiring the incorporation of noise abatement

measures in the City's planning documents. As shown in Table 4.6-4, the proposed Project would not be inconsistent with the General Plan Noise Element nor with specific policies in the element that were adopted for the purpose of avoiding or mitigating an environmental effect. Therefore, impacts associated with the City of Los Angeles General Plan Noise Element would be ***less than significant***.

Table 4.6-4
Project Consistency with Applicable Policies in the General Plan Noise Element

Policy/Program	Plan Inconsistency?
Policy 1.1: Incompatibility of airports identified by the Los Angeles County ALUC as "noise problem airports" (LAX, Van Nuys, and Burbank) and land uses shall be reduced to achieve zero incompatible uses within a CNEL of 65 dB airport noise exposure area, as required by Caltrans pursuant to the California Code of Regulations Title 21, Section 5000, et seq., or any amendment thereto.	See evaluation of consistency with individual programs that were developed to implement this policy, below.
Program P1: Continue to develop and implement noise compatibility ordinances and programs that are designed to abate airport-related noise impacts on existing uses, to phase out incompatible uses, and to guide the establishment of new uses within a CNEL of 65 dB noise exposure area of the Los Angeles International and Van Nuys airports and within those portions of the City that lie within a CNEL of 65 noise exposure area of the Burbank-Glendale-Pasadena Airport [Hollywood Burbank Airport].	No inconsistency. The proposed Project would not hinder the development or implementation of existing noise compatibility ordinances and programs. Moreover, the proposed Project would not establish new non-airport uses within the 65 CNEL contour. Thus, the Project would not be inconsistent with Program P1. While the proposed Project would still result in significant aircraft noise impacts, as discussed in Section 4.7.1, *Aircraft Noise*, the Project includes Mitigation Measure MM-AN (ATMP)-1 to address Project-related aircraft noise impacts on existing uses through updated sound insulation programs.
Program P2: Noise abatement, mitigation, and compatibility measures shall be incorporated into the City's general plan airport and harbor elements, including, where feasible, soundproofing of impacted sensitive uses, buffering, land use reconfiguration, modification of associated circulation and transportation systems, modification of operational procedures, conversion or phasing out of uses that are incompatible with airport or harbor uses, and/or other measures designed to reduce airport- and harbor-related noise impacts on adjacent communities.	No inconsistency. The City's general plan airport element is the LAX Plan. Noise policies in the LAX Plan that relate to the proposed Project are addressed in Table 4.6-5 below.

Table 4.6-4
Project Consistency with Applicable Policies in the General Plan Noise Element

Policy/Program	Plan Inconsistency?
Program P3: Continue to incorporate airport and harbor noise compatibility measures into the City's General Plan Community Plan elements for communities that are significantly impacted by airport- and harbor-related noise, including, where feasible, conversion or phasing out of land uses that are incompatible with airport and harbor uses, reclassification of zones, modification of associated circulation systems and/or other measures designed to reduce airport- and harbor-related noise impacts on adjacent communities.	No inconsistency. The City periodically updates its Community Plans, and includes policies to address airport noise, where applicable. The community plan that lies in proximity to LAX is the Westchester-Playa del Rey Community Plan. The proposed Project would not have any impacts on the Westchester-Playa del Rey Community Plan or hinder the incorporation of noise compatibility measures into the Plan. Moreover, as noted above, the proposed Project would not establish new incompatible uses within adjacent communities. Thus, the Project would not be inconsistent with Program P3. While, as mentioned above, the proposed Project would still result in significant aircraft noise impacts, as discussed in Section 4.7.1, *Aircraft Noise*, the Project includes Mitigation Measure MM-AN (ATMP)-1 to address Project-related aircraft noise impacts on existing uses through updated sound insulation programs.

Sources: City of Los Angeles, Department of City Planning, *Noise Element of the Los Angeles City General Plan*, adopted February 3, 1999. Available: https://planning.lacity.org/odocument/b49a8631-19b2-4477-8c7f-08b48093cddd/Noise_Element.pdf; City of Los Angeles, Department of City Planning, *Westchester - Playa del Rey Community Plan*, adopted April 13, 2004, amended September 7, 2016. Available: https://planning.lacity.org/odocument/67450916-225a-4a55-97a5-8fa184a7e91d/Westchester-Playa_Del_Rey_Community_Plan.pdf; City of Los Angeles, Department of City Planning, *Los Angeles International Airport (LAX) Specific Plan*, adopted December 14, 2004, last amended September 8, 2017. Available: https://lawamediastorage.blob.core.windows.net/lawa-media-files/media-files/lawa-web/lawa-our-lax/our-lax/17-0276-s2_ord_185164_10-28-17.pdf.

Prepared by: EnviCraft LLC, 2020.

Land Use Element Consistency

LAX Plan Consistency

The proposed Project would implement airside, terminal, and landside access improvements that would support the overall goals of the LAX Plan, which include strengthening LAX's unique role within the regional airport network as the international gateway to the Southern California region, developing and maintaining the highest standards of air traffic safety and passenger security through design and the latest innovations, and improving ground access to LAX. As shown in **Table 4.6-5**, the proposed Project would not be inconsistent with the LAX Plan overall nor with policies in the LAX Plan that were adopted for the purpose of avoiding or mitigating an environmental effect. Therefore, impacts associated with the LAX Plan would be ***less than significant***.

Table 4.6-5
Project Consistency with Applicable Policies in the LAX Plan

Policy/Program	Plan Inconsistency?
Land Use – Airport Airside	
P1. Develop a balanced airfield to provide for more efficient and effective use of airport facilities.	No inconsistency. The proposed airfield improvements would improve the operational efficiency of the north airfield, thereby contributing to a balanced airfield. The new Runway 6L-24R exits would enhance safety, better support the fleet operating at LAX, and provide operational flexibility and redundancy. The westerly extension of Taxiway D would improve the efficiency of aircraft movements in the north airfield. These improvements to the north airfield would provide for a more efficient and effective use of airport facilities.
Land Use – Airport Landside	
P1. Ensure that the scale and activity level of airport facilities appropriately relates to any abutting neighborhood edges.	No inconsistency. The proposed Project would not include landside improvements that abut neighborhood edges.
P3. Develop connections between Airport Landside facilities and the regional ground transportation network, defined as major and secondary highways, freeways, and public transit systems.	No inconsistency. The proposed Project would include landside access improvements that would reconfigure the CTA access roadways to increase queuing capacity. In addition, the Terminal 9 APM station would facilitate passenger connections to the regional ground transportation network, including the Metro Crenshaw/LAX light rail line.
P4. Develop direct links from each major Airport Landside facility to other Airport Landside and Airport Airside facilities.	No inconsistency. The proposed Project would include a new APM station along the previously-approved APM system, which would connect Terminal 9 to the other terminals in the CTA and to the previously-approved ITF West and CONRAC.
P6. Locate airport uses and activities with the potential to adversely affect nearby land uses through noise, light spill-over, odor, vibration, and other consequences of airport operations and development as far from, or oriented away from adjacent residential neighborhoods as feasible.	No inconsistency. The proposed Project would not be located adjacent to residential neighborhoods. The improvements to the north airfield (including the Taxiway D extension and new runway exits) would be located south of Runway 6L-24R and would not be located any closer to residential neighborhoods than the existing airfield infrastructure.
Conservation – Sustainability	
P1. Design new facilities to meet or exceed energy prescriptive standards required under Title 24.	No inconsistency. The proposed Project would be designed and constructed in accordance with LAWA's Sustainable Design and Construction Policy, which requires that new buildings be designed to achieve the United States Green Building Council's (USGBC) Leadership in Energy and Environmental Design (LEED®) Silver certification. LEED® Silver certification requires a project to be designed in a manner to save energy. This is discussed further in Section 4.3, *Energy*.
P2. Reduce energy usage and increase usage of green power at all airport facilities and in all operations.	No inconsistency. Concourse 0 and Terminal 9 would be designed as LEED® Silver facilities, which requires a project to be designed in a manner to save energy. This is discussed further in Section 4.3, *Energy*. Thus, the Project would not be inconsistent with Conservation – Sustainability Policy P2. In addition to the Project features listed above, and as discussed in Section 4.1.1, *Air Quality*, and Section 4.4, *Greenhouse Gas Emissions,* mitigation measures related to air quality and GHG impacts would also reduce energy use.

Table 4.6-5
Project Consistency with Applicable Policies in the LAX Plan

Policy/Program	Plan Inconsistency?
P3. Increase recycling and source reduction efforts at all facilities and for all operations.	No inconsistency. LAWA works closely with airport stakeholders and City of Los Angeles departments to improve, expand, and develop recycling and waste reduction activities at LAX to meet waste diversion goals laid out in the Sustainable City pLAn for Los Angeles.[1] The proposed Project would be included in LAWA's recycling and diversion program. Thus, the Project would not be inconsistent with Conservation – Sustainability Policy P3. In addition, as identified in Section 4.4, *Greenhouse Gas Emissions*, Mitigation Measures MM-GHG (ATMP)-2 and MM-GHG (ATMP)-4 would expand organic waste collection to include Concourse 0 and Terminal 9 and enhance the existing recycling program at LAX, respectively.
P4. Increase water conservation in all airport facilities and for all operations.	No inconsistency. The proposed Project would incorporate water-conserving devices into Concourse 0 and Terminal 9, install drought-tolerant landscaping and micro-irrigation, and provide infrastructure for the use of reclaimed water where appropriate. Thus, the Project would not be inconsistent with Conservation – Sustainability Policy P4. In addition, as identified in Section 4.4, *Greenhouse Gas Emissions,* Mitigation Measure MM-GHG (ATMP)-5 would require the use of non-potable water for all Project-related landscaping.
P6. Incorporate sustainable planning, design, and construction practices into all airport projects.	No inconsistency. Concourse 0 and Terminal 9 would be designed to achieve a minimum of LEED® Silver certification. In addition, the proposed airfield and roadway improvements would be required to meet LAWA's Sustainable Design & Construction Requirements. Specific sustainable planning, design, and construction practices are identified in Chapter 2, *Description of the Proposed Project*.
Circulation and Access	
P1. Develop direct links from each major Airport Airside and Airport Landside facility to other Airport Landside and Airport Airside facilities, as appropriate.	No inconsistency. The proposed Project would include a new APM station along the previously-approved APM system, which would connect Terminal 9 to the previously-approved ITF West and CONRAC.
P2. Connect airport facilities to, and to the extent feasible, improve the safety, operation, and mobility of, the regional ground transportation network.	No inconsistency. The proposed Project would include landside access improvements, which include reconfigured roadways for access to and from the CTA. These roadway improvements would have greater queuing capacity than the existing roadway system, which would improve through-traffic conditions and mobility on the surrounding transportation network, and would enhance driver wayfinding to and from the CTA, which would improve safety.
P3. Provide facilities that encourage transit ridership.	No inconsistency. The proposed Project would include a new APM station along the previously-approved APM system, which would connect with the Metro Crenshaw/LAX light rail line.
P11. Connect to transit, encouraging transit ridership to LAX.	No inconsistency. The proposed Project would include a new APM station along the previously-approved APM system, which would connect with the Metro Crenshaw/LAX Light Rail line.

Table 4.6-5
Project Consistency with Applicable Policies in the LAX Plan

Policy/Program	Plan Inconsistency?
P14. Reduce vehicle emissions and improve air quality.	No inconsistency. LAWA has adopted a wide-ranging Clean Fleet Program for LAX operators, including the LAX Alternative Fuel Vehicle Policy and accompanying Incentive Program. In addition, LAWA promotes use of alternatively fueled vehicles by passengers and employees by providing electric vehicle charging stations in airport parking lots. Thus, the proposed Project would not be inconsistent with Circulation and Access Policy P14. While the proposed Project would result in significant impacts related to Air Quality, as described in Section 4.8, *Transportation,* and 4.1.1, *Air Quality,* the proposed Project would include Project features and mitigation measures that would reduce VMT and vehicle-related emissions and improve air quality.
Noise	
P1. Maintain and enhance applicable elements of the current Aircraft Noise Abatement Program that pertain to aircraft noise.	No inconsistency. The proposed Project would not impact the applicable elements of the current Aircraft Noise Abatement Program. Thus, the Project would not be inconsistent with Noise Policy P1. While the proposed Project would still result in significant aircraft noise impacts, as discussed in Section 4.7.1, *Aircraft Noise*, the Project includes Mitigation Measure MM-AN (ATMP)-1 to address Project-related aircraft noise impacts on existing uses through implementation of updated sound insulation programs.
P2. Update facilities, gates, and runways, to accommodate the New Large Aircraft (NLA) and the next generation of quieter jets.	No inconsistency. The westerly extension of Taxiway D would be designed with ADG VI separation from Taxiway E, and the accompanying new vehicle service road south of the Taxiway D extension would be designed at ADG VI separation from Taxiway D. In association with Concourse 0, the easterly extension of Taxiway E would be designed as an ADG V/restricted ADG VI taxiway. Terminal 9 is previously-approved as a 12-gate international and domestic terminal facility with capability to support ADG VI operations. In addition, in association with Terminal 9, the easterly extension of Taxiway C would be designed at ADG VI separation from Taxiway B, and the relocated vehicle service would be designed at ADG VI separation from Taxiway C.
P8. Continue to implement LAX's Airport [Aircraft] Noise Mitigation Program to mitigate noise impacts to incompatible land uses (residences, schools, hospitals, churches, and libraries).	No inconsistency. The proposed Project would not conflict with nor impact the implementation of LAX's Airport [Aircraft] Noise Mitigation Program. Thus, the Project would not be inconsistent with Noise Policy P8. While the proposed Project would still result in significant aircraft noise impacts, as discussed in Section 4.7.1, *Aircraft Noise*, the Project includes Mitigation Measure MM-AN (ATMP)-1 to address Project-related aircraft noise impacts on existing uses through implementation of updated sound insulation programs.
P9. Locate airport uses and activities with the potential for noise impacts as far from adjacent residential neighborhoods as feasible.	No inconsistency. The proposed Project would not be located adjacent to residential neighborhoods. The improvements to the north airfield (including the Taxiway D extension and new runway exits) would be located south of Runway 6L-24R and would not be located any closer to residential neighborhoods than the existing airfield infrastructure.

Table 4.6-5
Project Consistency with Applicable Policies in the LAX Plan

Policy/Program	Plan Inconsistency?
Air Quality	
P1. Modify runways and taxiways to reduce airfield delays and congestion in order to lessen air [pollutant] emissions through reduced idle time.	No inconsistency. The proposed airfield improvements (westerly extension of Taxiway D, easterly extension of Taxiways D and E, easterly extension of Taxiway C) would reduce airfield delays and congestion, which would reduce idle times and related air pollutant emissions.
P4. Provide facilities that encourage transit ridership.	No inconsistency. The proposed Project would include a new APM station along the previously-approved APM system, which would connect with the Metro Crenshaw/LAX light rail line.
P5. Establish land use and traffic circulation patterns that reduce traffic and congestion, thereby reducing automobile idle times and subsequent motor vehicle emissions.	No inconsistency. The proposed Project would reconfigure the access roadways to and from the CTA and would have greater queuing capacity than the existing CTA access roadways, which would improve through traffic conditions on the surrounding transportation network.
Design	
P1. Appropriately relate those airport facilities that are adjacent to community land uses to the scale and level of activity of those uses.	No inconsistency. The proposed Project would not include landside improvements that abut neighborhood edges. The scale and activity of the proposed Project's terminal and landside components would be consistent with surrounding land uses.

Source: City of Los Angeles, Department of City Planning, *Los Angeles International Airport - LAX Plan*, adopted December 14, 2004, last amended June 7, 2017. Available: https://www.lawa.org/-/media/lawa-web/lawa-our-lax/plan-and-ordiance/2017-lax-plan.ashx?la=en&hash=A56B9B036C9CC63428A4AC5DC0E910992C1B0F53.

Note:

[1] City of Los Angeles, *Sustainability Elements: Material Resources Management*. Available: https://www.lawa.org/en/lawa-sustainability/sustainability-elements-material-resource-management, accessed November 12, 2019.

Prepared by: EnviCraft LLC, 2020.

Westchester-Playa del Rey Community Plan Consistency

One of the objectives of the Westchester-Playa del Rey Community Plan is to coordinate the development of LAX with the surrounding communities. The proposed Project would improve access to and from LAX and relieve congestion on surrounding roadways and, therefore, would be consistent with the Westchester-Playa del Rey Community Plan. Therefore, the proposed Project would not be inconsistent with land use policies of the Westchester-Playa del Rey Community Plan adopted for the purpose of avoiding or mitigating an environmental effect and impacts related to Project consistency with the Westchester-Playa del Rey Community Plan would be ***less than significant***.

South Los Angeles Community Plan Consistency

Although the proposed Project is within the LAX Plan area, the proposed Project would result in a change in airport noise contours that overlap the South Los Angeles Community Plan area. Impacts related to this change are discussed in Section 4.7.1, *Aircraft Noise.* As described in that section, mitigation is proposed that would address aircraft noise impacts to land uses in the South Los Angeles Community Plan area through updated sound insulation programs. As previously described, the South Los Angeles Community Plan does not contain policies related to LAX. Therefore, the proposed Project would not be inconsistent with the South Los Angeles Community Plan and there would be ***no impacts*** associated with the South Los Angeles Community Plan.

City of Los Angeles Zoning, Specific Plans, and Streetscape Plan

LAX Specific Plan Consistency

The LAX Specific Plan provides regulatory controls and ensures the orderly development of LAX consistent with the LAX Plan. The proposed improvements would occur in areas within the Airport Airside and Airport Landside Subareas.

The proposed airfield improvements are safety enhancements designed to improve the safety and efficiency of aircraft operations; the terminal improvements are designed to allow the airport to accommodate aircraft and passengers in a more efficient manner. These improvements are consistent with the intent of the Airport Airside Subarea, which is to allow for the safe and efficient operation of airport facilities. The proposed landside access improvements would enhance connections to the APM and the local transit network and improve the vehicle routing into and out of the CTA. These improvements would be consistent with the Airport Landside Subarea, which is to allow for the safe and efficient operation of airport facilities, the primary function of which is to provide access to the airport and process passengers.[33] Based on the above, the proposed Project would not be inconsistent with the LAX Specific Plan. Therefore, impacts associated with the LAX Specific Plan would be ***less than significant***.

Coastal Transportation Corridor Specific Plan

The proposed Project would be subject to the requirements of the Coastal Transportation Corridor Specific Plan and would make contributions to the Transportation Impact Assessment fee program, as applicable. The proposed Project's potential impacts on transportation are further discussed in Section 4.8, *Transportation*. The proposed Project would not be inconsistent with the Coastal Transportation Corridor Specific Plan; therefore, impacts would be ***less than significant***.

Century Boulevard Streetscape Plan

The purpose of the Century Boulevard Streetscape Plan is to improve pedestrian walkability, aesthetics, and street-front business opportunities along Century Boulevard between Sepulveda Boulevard and La Cienega Boulevard to highlight its role as the "Gateway to Los Angeles." The proposed Project would reconfigure the access roadway between the CTA and Century Boulevard and improve sections of Century Boulevard (see Figure 2-4 in Chapter 2, *Description of the Proposed Project*). The proposed Project would be subject to the requirements of the Century Boulevard Streetscape Plan.

As shown in **Table 4.6-6**, the proposed Project would not be inconsistent with applicable policies of the Century Boulevard Streetscape Plan that were adopted for the purpose of avoiding or mitigating an environmental effect. Therefore, impacts associated with the Century Boulevard Streetscape Plan would be ***less than significant***.

[33] City of Los Angeles, Department of City Planning, *Los Angeles International Airport (LAX) Specific Plan*, adopted December 14, 2004, last amended September 8, 2017. Available: https://lawamediastorage.blob.core.windows.net/lawa-media-files/media-files/lawa-web/lawa-our-lax/our-lax/17-0276-s2_ord_185164_10-28-17.pdf.

Table 4.6-6
Project Consistency with Applicable Policies in the Century Boulevard Streetscape Plan

Goal	Plan Inconsistency?
Goal: Incorporate "Green Streets" principles and design techniques along the corridor. These principles will allow for more sustainable management of stormwater runoff by infiltrating the runoff into the ground or filtering out pollutants before allowing the runoff to flow into the storm drains and ultimately, the Santa Monica Bay.	No inconsistency. The street-level roadway improvements would comply with the City's LID and SUSMP requirements where applicable, which provide for stormwater capture and infiltration.

Source: City of Los Angeles, *Century Boulevard Streetscape Plan*, May 21, 2018. Available: https://planning.lacity.org/plans-policies/overlays/century-boulevard.

Prepared by: EnviCraft LLC, 2020.

4.6.5.1.3 Consistency with Plans of Other Jurisdictions within the Study Area

The proposed Project would not be located within the boundaries of other jurisdictions or communities and, therefore, the proposed Project would not directly result in inconsistencies with the applicable general plans of adjacent jurisdictions. However, the proposed Project would result in aircraft noise impacts in the surrounding areas; therefore, these areas are included within the study area. These impacts are discussed in Section 4.7.1, *Aircraft Noise.* As described in that section, mitigation is proposed that would address aircraft noise impacts to land uses in these jurisdictions through updated sound insulation programs. The City of El Segundo General Plan, the City of Inglewood General Plan, and the Los Angeles County General Plan contain policies regarding LAX. However, because the land use plans for these communities do not have jurisdiction over airport land, the goals and policies are designed to be responsive to airport development and operations within their jurisdictional boundaries and not to control airport development or operations. As a result, the proposed Project would not conflict with policies in these plans adopted for the purpose of avoiding or mitigating an environmental effect. Therefore, the proposed Project would have ***no impact*** on these plans.

4.6.5.1.4 Mitigation Measures

Because the proposed Project would result in a ***less than significant impact*** to land use and planning, no mitigation is required for construction or operations.

4.6.5.1.5 Significance of Impact After Mitigation

As indicated above, no mitigation is required to address land use and planning. The proposed Project would result in a ***less than significant impact*** for construction and operations.

4.6.6 Cumulative Impacts

As discussed above, the proposed Project would not be inconsistent with applicable land use plans, policies, and regulations adopted for the purpose of avoiding or mitigating an environmental effect. Therefore, impacts of the proposed Project related to land use plans, policies, or regulations would be less than significant.

As shown in Table 3-1 in Chapter 3, *Overview of Project Setting*, there are other ongoing and planned development projects within the immediate vicinity of the proposed Project. The majority of these projects represent further improvement of airport facilities and development of the surrounding area. These projects will take place within an already urbanized context and will not result in land use changes that would create fundamental conflicts with applicable land use plans, policies, and regulations that were adopted for the purpose of avoiding or mitigating an environmental effect.

LAWA reviews all airport projects to ensure consistency with the LAX Plan, the LAX Specific Plan, and other airport and City plans and guidelines. The most notable cumulative airport project is the LAX Landside Access Modernization Program. This program includes new transportation facilities that will fundamentally alter access to and from LAX and will relieve congestion and improve the LAX passenger experience. The new transportation facilities are consistent with local and regional mobility planning initiatives and land use plans, policies, and regulations that were adopted for the purpose of avoiding or mitigating an environmental effect.[34]

The only non-airport project identified in Table 3-1 is the Airport Metro Connector 96th Street Transit Station. Similar to the LAX Landside Access Modernization Program, the Airport Metro Connector 96th Street Transit Station EIR is consistent with local and regional mobility goals and with other land use plans, policies, and regulations that were adopted for the purpose of avoiding or mitigating an environmental effect.[35]

Implementation of the proposed Project, combined with transportation improvements associated with the LAX Landside Access Modernization Program and the Airport Metro Connector 96th Street Transit Station, would provide enhanced accessibility for non-vehicular modes of transportation and would increase accessibility to the airport. Implementation of these projects would be consistent with local and regional mobility planning initiatives, including the City's Mobility Plan 2035 and the 2020-2045 RTP/SCS. Overall, cumulative impacts to land use and planning associated with the proposed Project, in combination with ongoing and future projects at LAX and in the immediate vicinity, would be ***less than significant***.

4.6.7 Summary of Impact Determinations

Table 4.6-7 summarizes the impact determinations of the proposed Project related to land use and planning, as described above in Sections 4.6.5 and 4.5.6. Impacts determinations are based on the significance criteria presented in Section 4.6.4, and the information and data sources cited throughout Section 4.6.

Table 4.6-7
Summary of Impacts and Mitigation Measures Associated with the Proposed Project Related to Land Use and Planning

Environmental Impacts	Impact Determination	Mitigation Measures	Level of Significance After Mitigation
Impact 4.6-1: Implementation of the proposed Project would not conflict with land use plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect. This would be a ***less than significant impact*** for construction and operations.	Less than Significant	No mitigation is required	Less than Significant

[34] City of Los Angeles, Los Angeles World Airports, *Final Environmental Impact Report for Los Angeles International Airport (LAX) Landside Access Modernization Program*, (SCH 2015021014), Section 4.8 - Land Use and Planning, February 2017. Available: https://www.lawa.org/en/connectinglax/automated-people-mover/documents.

[35] Los Angeles County Metropolitan Transportation Authority, *Airport Metro Connector 96th Street Transit Station Draft Environmental Impact Report*, (SCH 2015021009), June 2016. Available: https://media.metro.net/projects_studies/crenshaw/images/AMC_96th_St_Station_Draft_EIR_2016-6.pdf.

4.7 Noise

This section analyzes the proposed Project's impacts related to noise, including impacts from both construction and operational activities. The noise analysis evaluates the impacts of the proposed Project on noise-sensitive receptors located near the Project site.

This section is organized into three subsections to provide detailed discussions of the primary noise types or sources associated with the proposed Project: Aircraft Noise, Roadway Traffic Noise, and Construction Traffic and Equipment Noise and Vibration. The general characteristics of noise and the metrics used to measure sound, which are presented in Section 4.7.1 below, are common to the noise discussion in each subsection.

4.7.1 Aircraft Noise

4.7.1.1 Introduction

This subsection analyzes the proposed Project's impacts related to aircraft noise, including the impacts of the proposed Project on noise-sensitive receptors. The analysis is based on noise modeling completed by HMMH, with the methodology and technical assumptions provided within **Appendix F.1** of this EIR. This subsection describes the general characteristics of noise, the impact evaluation methodology, the existing conditions (regulatory framework and existing noise conditions), the thresholds of significance, and the potential aircraft noise impacts associated with the proposed Project.

4.7.1.1.1 General Characteristics of Noise

In order to understand results from a noise analysis, it is important to establish a foundation in the basics of sound and metrics used to measure it. This section describes the physics of sound, the methods used to measure sound level and impact, and the effects of noise on humans.

Sound, when transmitted through the air and upon reaching our ears, may be perceived as desirable or unwanted. People normally refer to unwanted sound as noise. The response to sound is subjective; individuals have different perceptions, sensitivities, and reactions to noise. Loud sounds may bother some people, while others may be bothered by certain rhythms or frequencies of sound. Sounds that occur during sleeping hours are usually considered to be more objectionable than those that occur during waking hours and hours of activity (typically daytime).

Aircraft noise originates from both the engines and the airframe of an aircraft, but the engines are typically the more significant source of noise.[1] Motor vehicle noise, such as that associated with cars and trucks moving along a roadway, originates primarily from a combination of the engine, drivetrain (i.e., transmission, rear and/or front differentials), tires interacting with the road surface, and aerodynamic flow around the vehicle. Construction noise originates from a combination of the engines and drivetrains of construction equipment and the specific activity being undertaken.

Meteorological conditions affect the transmission of sound through the air. Wind speed and direction, and the temperature immediately above ground level, cause diffraction[2] and displacement of sound

[1] Airframe noise is generated when airflow becomes more turbulent from structures that extend from an aircraft, such as wing flaps and landing gear. Airframe noise can also be generated as air flows past cutouts and cavities, such as uncovered wheel wells. Airframe noise is particularly noticeable on approach, when engine noise is relatively low; the opposite occurs relative to aircraft departures when engine noise is greater. At LAX, aircraft departures are primarily over open water and aircraft arrivals are primarily over developed land. As such, noise-sensitive receptors around LAX are affected primarily by arrivals, with aircraft airframes being the main source of noise.

[2] Diffraction is the change in the directions and intensities of a group of waves after passing by an obstacle or through an aperture whose size is approximately the same as the wavelength of the waves.

waves. Humidity and temperature materially affect the transmission of air-to-ground sound through absorption associated with the instability and viscosity of the air.[3]

4.7.1.1.2 Noise Descriptors

Noise levels are measured using a variety of scientific metrics. As a result of extensive research into the characteristics of noise and human response to that noise, standard noise descriptors have been developed for noise exposure analyses. The descriptors used in this noise analysis are described below.

A-Weighted Sound Pressure Level (dBA)

The decibel (dB) is a unit used to describe sound pressure level. When expressed in dBA, the sound has been filtered to reduce the effect of very low and very high frequency sounds, much as the human ear filters sound frequencies. Without this filtering, calculated and measured sound levels would include events that the human ear cannot hear (e.g., dog whistles and low frequency sounds, such as the groaning sounds emanating from large buildings with changes in temperature and wind). With A-weighting, calculations and sound monitoring equipment approximate the sensitivity of the human ear to sounds of different frequencies.

Some common sounds on the dBA scale are listed in **Table 4.7.1-1**. As shown in Table 4.7.1-1, the relative perceived loudness of a sound doubles for each increase of 10 dBA, and a 10 dBA change in the sound level corresponds to a factor of 10 increase or decrease in relative sound energy.

Table 4.7.1-1
Common Sounds on the A-Weighted Decibel Scale

Sound	Sound Level (dBA)	Relative Loudness (Approximate)	Relative Sound Energy
Rock music, with amplifier	120	64	1,000,000
Thunder, snowmobile (operator)	110	32	100,000
Boiler shop, power mower	100	16	10,000
Orchestral crescendo at 25 feet, noisy kitchen	90	8	1,000
Busy street	80	4	100
Interior of department store	70	2	10
Ordinary conversation, 3 feet away	60	1	1
Quiet automobiles at low speed	50	1/2	.1
Average office	40	1/4	.01
City residence	30	1/8	.001
Quiet country residence	20	1/16	.0001
Rustle of leaves	10	1/32	.00001
Threshold of hearing	0	1/64	.000001

Source: U.S. Department of Housing and Urban Development, *Aircraft Noise Impact--Planning Guidelines for Local Agencies*, Figure 2-2. 1972.

In general, humans find a change in sound level of 3 dBA is just noticeable; a change of 5 dBA is clearly noticeable; and a change of 10 dBA is perceived as a doubling or halving of sound level. Because of the logarithmic scale of the decibel unit, sound levels generally cannot be added or subtracted arithmetically. Two sounds of equal physical intensity will result in the sound level increasing by 3 dB, regardless of the

[3] In Southern California, temperature inversions can occur frequently. Temperature inversion occurs when the air temperature increases as altitude increases, which can have the effect of increasing the sound heard by a receiver at ground level.

initial sound level. For example, 60 dBA plus 60 dBA equals 63 dB, and 80 dBA plus 80 dBA equals 83 dB. However, where ambient noise levels are high in comparison to a new noise source, there will be a small change in noise levels. For example, when 70 dBA ambient noise levels are combined with a 60 dBA noise source, the resulting noise level equals 70.4 dB.

Maximum Noise Level (L_{max})

L_{max} is the maximum or peak sound level during a noise event. The metric accounts only for the instantaneous peak intensity of the sound, and not for the duration of the event. As a vehicle or aircraft passes by an observer, the sound level increases to a maximum level and then decreases. Some sound level meters measure and record the maximum or L_{max} level.

Single Event Noise Exposure Level (SENEL) and Sound Exposure Level (SEL)

One metric that is often reported for aircraft flyovers is the Single Event Noise Exposure Level (SENEL). This metric is essentially equivalent to the Sound Exposure Level (SEL). SEL, expressed in dBA, is a time integrated measure, expressed in decibels, of the sound energy of a single noise event at a reference duration of one second. The sound level is integrated over the period that the level exceeds a threshold. Therefore, SEL accounts for both the maximum sound level and the duration of the sound. The standardization of discrete noise events into a one-second duration allows calculation of the cumulative noise exposure of a series of noise events that occur over a period of time. Because of this compression of sound energy, the SEL of an aircraft noise event is typically 7 to 12 dBA greater than the L_{max} of the event. SELs for aircraft noise events depend on the location of the aircraft relative to the noise receptor, the type of operation (landing, takeoff, or overflight), and the type of aircraft. The SEL concept is depicted in **Figure 4.7.1-1.**

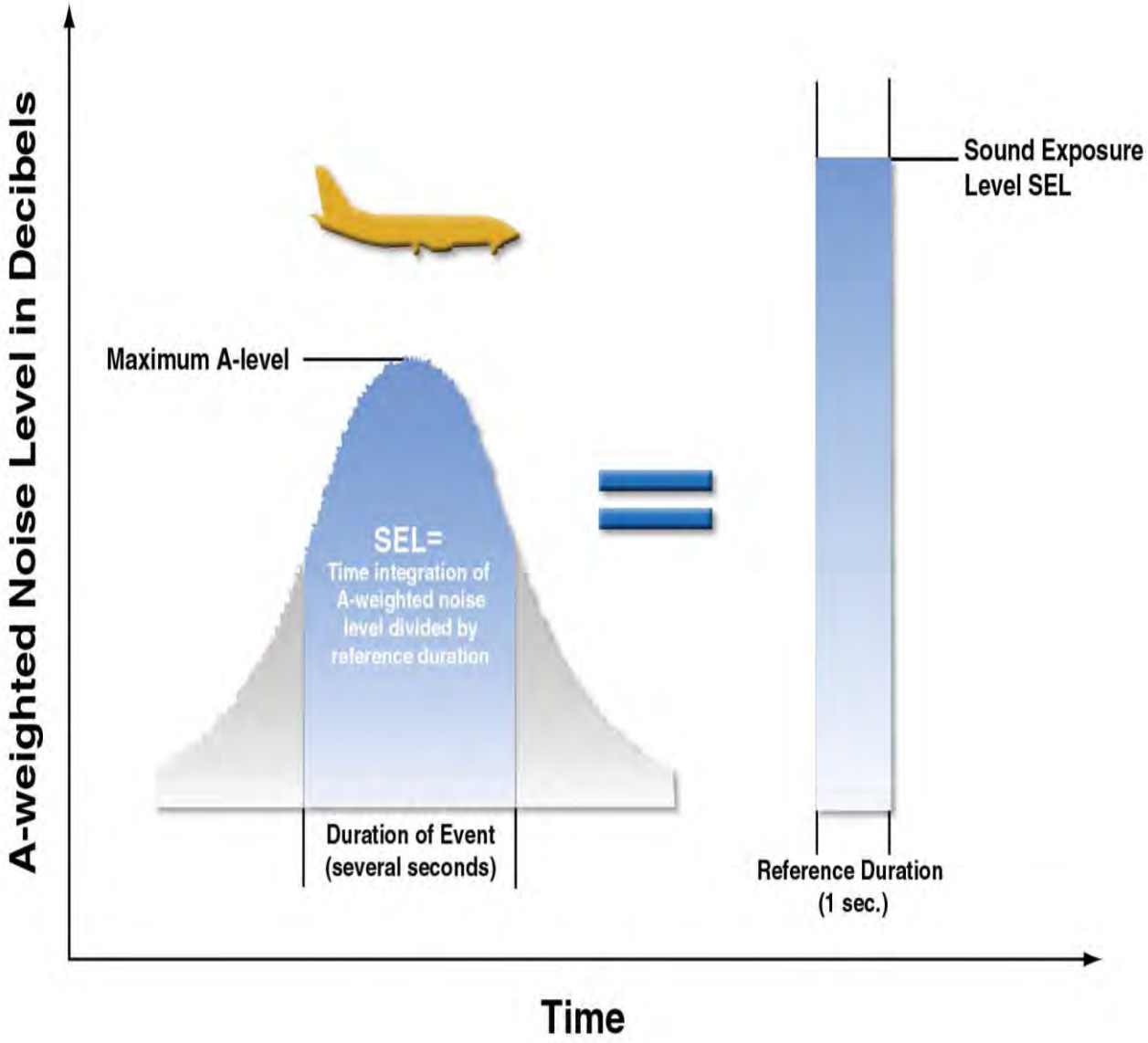
Equivalent Continuous Noise Level (L_{eq})

L_{eq} is the sound level, expressed in dBA, of a steady sound that has the same A-weighted sound energy as the time-varying sound over the averaging period. Unlike SEL, L_{eq} is the average sound level for a specified time period (e.g., 24 hours, 8 hours, 1 hour, etc.). L_{eq} is calculated by integrating the sound energy from all noise events over a given time period and applying a factor for the number of events. L_{eq} can be expressed for any time interval; for example, the L_{eq} representing an averaged level over an 8-hour period would be expressed as $L_{eq}(8)$. L_{eq} hourly measurements are used to develop Community Noise Equivalent Level (CNEL) values (described later in the section).

Day-Night Average Sound Level (DNL)

DNL, formerly referred to as L_{dn}, is expressed in dBA and represents the noise level over a 24-hour period. Because environmental noise fluctuates over time, DNL was devised to relate noise exposure over time to human response. DNL is a 24-hour average of the hourly L_{eq}, but with penalties to account for the increased sensitivity to noise events that occur during the more noise-sensitive nighttime periods. Specifically, DNL penalizes noise 10 dBA during the nighttime time period (10:00 p.m. to 7:00 a.m.), but it does not include an evening penalty (7:00 p.m. to 10:00 p.m.).

The U.S. Environmental Protection Agency (USEPA) introduced the metric in 1976 as a single number measurement of community noise exposure. The Federal Aviation Administration (FAA) adopted DNL as the noise metric for measuring cumulative aircraft noise under Federal Aviation Regulations (FAR) Part 150, *Airport Noise Compatibility Planning*. The Department of Housing and Urban Development, the Veterans Administration, the Department of Defense, the United States Coast Guard, and the Federal Transit Administration have also adopted DNL for measuring cumulative noise exposure.



Source: Brown-Buntin Associates, Inc., November 2004
Prepared by: CDM Smith, October 2020

LAX Airfield and Terminal Modernization Project	Sound Exposure Level Concept	Figure **4.7.1-1**

DNL, which is the noise metric used to represent cumulative noise exposure for most airports in the U.S. outside of California, is used to describe existing and predicted noise exposure in communities in airport environs based on the average daily operations during the year and the average annual operational conditions at an airport. Therefore, at a specific location near an airport, the noise exposure on a particular day is likely to be higher or lower than the annual average noise exposure, depending on the specific operations at an airport on that day. DNL is widely accepted as the best available method to describe aircraft noise exposure and is the noise descriptor required for aircraft noise exposure analyses and land use compatibility planning under FAR Part 150 and for environmental assessments for airport improvement projects (FAA Order 1050.1F).[4] The FAA guidelines allow for the use of CNEL as a substitute to DNL, as further discussed below.

Community Noise Equivalent Level (CNEL)

CNEL, expressed in dBA, is the standard metric used in California to represent cumulative noise exposure. Similar to DNL, CNEL provides a single-number description of the sound energy to which a person or community is exposed over a period of 24 hours from all noise sources. CNEL includes penalties applied to noise events occurring after 7:00 p.m. and before 7:00 a.m., when noise is considered more intrusive (due to the types of activities that are likely to be affected, including sleep). CNEL also accounts for the typically lower ambient noise levels during these hours. The penalized time period is further subdivided into evening (7:00 p.m. through 9:59 p.m.) and nighttime (10:00 p.m. to 6:59 a.m.). When a noise event occurs in the evening, a penalty of 4.77 dBA is added to the nominal sound level (equivalent to a three-fold increase in aircraft operations). A 10-dBA penalty is added to nighttime noise events (equivalent to a ten-fold increase in aircraft operations).

Examples of typical outdoor noise levels measured in terms of CNEL decibel levels include wilderness areas at approximately 35 CNEL, rural residential areas at approximately 40 to 50 CNEL, suburban areas at approximately 60 CNEL, high-density development areas at approximately 70 CNEL, and development adjacent to a major freeway at approximately 85 CNEL.

The CNEL metric used for this aircraft noise analysis is based on an Average Annual Day (AAD) of aircraft operations, generally derived from data for a calendar year. An AAD activity profile is computed by adding all aircraft operations occurring during the course of a year and dividing the result by 365. As such, AAD does not reflect activities on any one specific day, but represents average conditions as they occur during the course of the year.

The evening weighting is the only difference between CNEL and DNL. Typically, DNL is about 1 dBA lower than CNEL, although the difference may be greater if there is an atypical concentration of noise events in the 7:00 p.m. to 10:00 p.m. time period. For purposes of aircraft noise analysis in the State of California, the FAA recognizes the use of CNEL. CNEL is also specified for use in the California Airport Noise Regulations (discussed in Section 4.7.1.3.1 below) and is used by the City of Los Angeles in its General Plan Noise Element for land use compatibility planning.

Time Above (TA)

TA measures the amount of time (in minutes) a source emits a noise that exceeds a designated threshold level. For instance, the threshold could be outdoor speech interference. TA is therefore both a single event and a cumulative noise metric.

[4] U.S. Department of Transportation, Federal Aviation Administration, *Order 1050.1F, Environmental Impacts: Policies and Procedures*, July 16, 2015. Available: https://www.faa.gov/documentLibrary/media/Order/FAA_Order_1050_1F.pdf.

4.7.1.1.3 Effects of Noise on Humans

Noise, often described as unwanted sound, is known to have several adverse effects on humans. These noise effects may include hearing loss (not a factor with typical community noise), communication interference, sleep interference, physiological responses, and annoyance. Many of the impacts described in this section are described in greater detail in the *Airport Cooperative Research Program's ACRP Synthesis 9, Effects of Aircraft Noise: Research Update on Selected Topics*,[5] published in 2008. Each of these potential noise impacts are briefly discussed below.

Hearing Loss

Hearing loss is generally not a concern in community noise problems, even very near a major airport or a major freeway. Environmental noise does not have an effect on hearing threshold levels due, in large part, to the fact that environmental noise does not approximate occupational noise exposures found in heavy industry, very noisy work environments with long-term exposure, or certain very loud recreational activities such as target shooting, motorcycle or automobile racing, etc. The Occupational Safety and Health Administration (OSHA) identifies a noise exposure limit of 90 dBA for 8 hours per day to protect from hearing loss (higher limits are allowed for shorter duration exposures). Noise levels in neighborhoods, even in very noisy neighborhoods, are not sufficiently loud to cause hearing loss.

Communication Interference

Communication Interference includes speech interference and interference with activities such as watching television. Normal conversational speech is in the range of 60 to 65 dBA and any noise in this range or louder may interfere with speech.

Sleep Disturbance

Sleep Disturbance is one of the causes of annoyance due to noise. Noise can make it difficult to fall asleep, create momentary disturbances of natural sleep patterns by causing shifts from deep to lighter sleep stages, and cause awakenings, which a person may or may not be able to recall.

The following provides an overview of research and studies that have been completed relative to noise-related sleep disturbance.

Extensive research has been conducted on the effect of noise on sleep disturbance. Some years ago (1981), the National Association of Noise Control Officials published data on the probability of sleep disturbance with various single event noise levels.[6] Based on laboratory experiments conducted in the 1970s, these data indicated noise exposure at 75 dBA interior noise level event could cause noise-induced awakening in 30 percent of the cases.

However, later research from the United Kingdom[7,8] has shown that the probability for sleep disturbance is less than what had been reported in earlier research. These field studies were conducted during the 1990s and used more sophisticated data collection techniques. The field studies indicated that awakenings can be expected at a much lower rate than had been expected based on earlier laboratory studies. This research showed that, once a person was asleep, it was much more unlikely that they would be awakened by a noise. The significant difference in the more recent study is the use of actual in-home

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5 Transportation Research Board of the National Academies, Airport Cooperative Research Program, *ACRP Synthesis 9, Effects of Aircraft Noise: Research Update on Selected Topics*, 2008.

6 National Association of Noise Control Officials, *Noise Effects Handbook*. 1981. Available: http://www.nonoise.org/library/handbook/handbook.htm.

7 Department of Transport [United Kingdom], Department of Safety, Environment and Engineering Civil Aviation Authority, *Report of a Field Study of Aircraft Noise and Sleep Disturbance,* December 1992.

8 Horne J.A., F.L. Pankhurst, L.A. Reyner, K. Hume, and I.D. Diamond, "A Field Study of Sleep Disturbance: Effects of Aircraft Noise and Other Factors on 5,742 Nights of Actimetrically Monitored Sleep in a Large Subject Sample," *Sleep*, 1994 Mar; 17(2):146-59.

sleep disturbance patterns as opposed to laboratory data that had been the historic basis for predicting sleep disturbance. Some of this research has been criticized, because it was conducted in areas where subjects had become habituated to aircraft noise. On the other hand, some of the earlier laboratory sleep studies were criticized, because of the extremely small sample sizes of most laboratory studies and because the laboratory was not necessarily a representative sleep environment. A 1994 sleep study compared the various causes of sleep disturbance using in-home sleep studies. This field study assessed the effects of nighttime aircraft noise on sleep in 400 people (211 women and 189 men, 20-70 years of age, one per household) habitually living at eight sites adjacent to four United Kingdom airports, with different levels of night flying. The main findings were that only a minority of aircraft noise events affected sleep, and, for most subjects, domestic and other non-aircraft factors had much greater effects. As shown in **Figure 4.7.1-2**, aircraft noise was a minor contributor among a host of other factors that lead to awakening response.

The U.S. Federal Interagency Committee on Noise (FICON), in a 1992 document entitled *Federal Interagency Review of Selected Airport Noise Analysis Issues,*[9] recommended an interim dose-response curve for sleep disturbance based on laboratory studies of sleep disturbance. In June 1997, the Federal Interagency Committee on Aviation Noise (FICAN) updated the FICON recommendation with an updated graph/curve (equating SEL to probability of awakening) based on more recent in-home sleep disturbance studies, which showed lower rates of awakening compared to the laboratory studies.[10] The FICAN recommended a curve based on the upper limit of the data presented and, therefore, considered the curve to represent the "maximum percent of the exposed population expected to be behaviorally awakened," or the "maximum awakened." The FICAN recommendation is shown in **Figure 4.7.1-3.** This is a very conservative approach. A more common statistical curve for the data points reflected in Figure 4.7.1-3, for example, would indicate a 10 percent awakening rate at a level of approximately 100 dBA SEL, while the "maximum awakened" curve reflected in Figure 4.7.1-3 shows the 10 percent awakening rate being reached at 80 dBA SEL.

In 2008, FICAN modified its recommendations to include a more recent procedure developed by the American National Standards Institute (ANSI) (ANSI S12.9-2008) for estimating awakenings from nighttime noise, which showed that significantly higher noise levels are required for a population habituated to nighttime noise.[11] The ANSI standard provided a method to predict sleep disturbance in home settings where people are familiar with the neighborhood noise environment; specifically, the probability of awakening at least once to the sound from distributions of single noise events over the course of a whole night. That relationship is shown in **Figure 4.7.1-4**. However, this curve is still considered conservative in that it does not include the cases in which no awakenings were observed in certain noise exposure intervals. These cases include three in the Denver field studies, in which no awakenings were observed in 3 dB-wide sound exposure level (LAE) intervals centered at 91, 94, and 97 dB. Given exclusion of these data points, the probability of awakening at a specific SEL level may be less than the values shown in Figure 4.7.1-4. In addition, the FICAN analysis does not account for combined multiple events, because the dose-response curve does not take into account the number of events. A standard to evaluate the impact of combined multiple events has not been established.

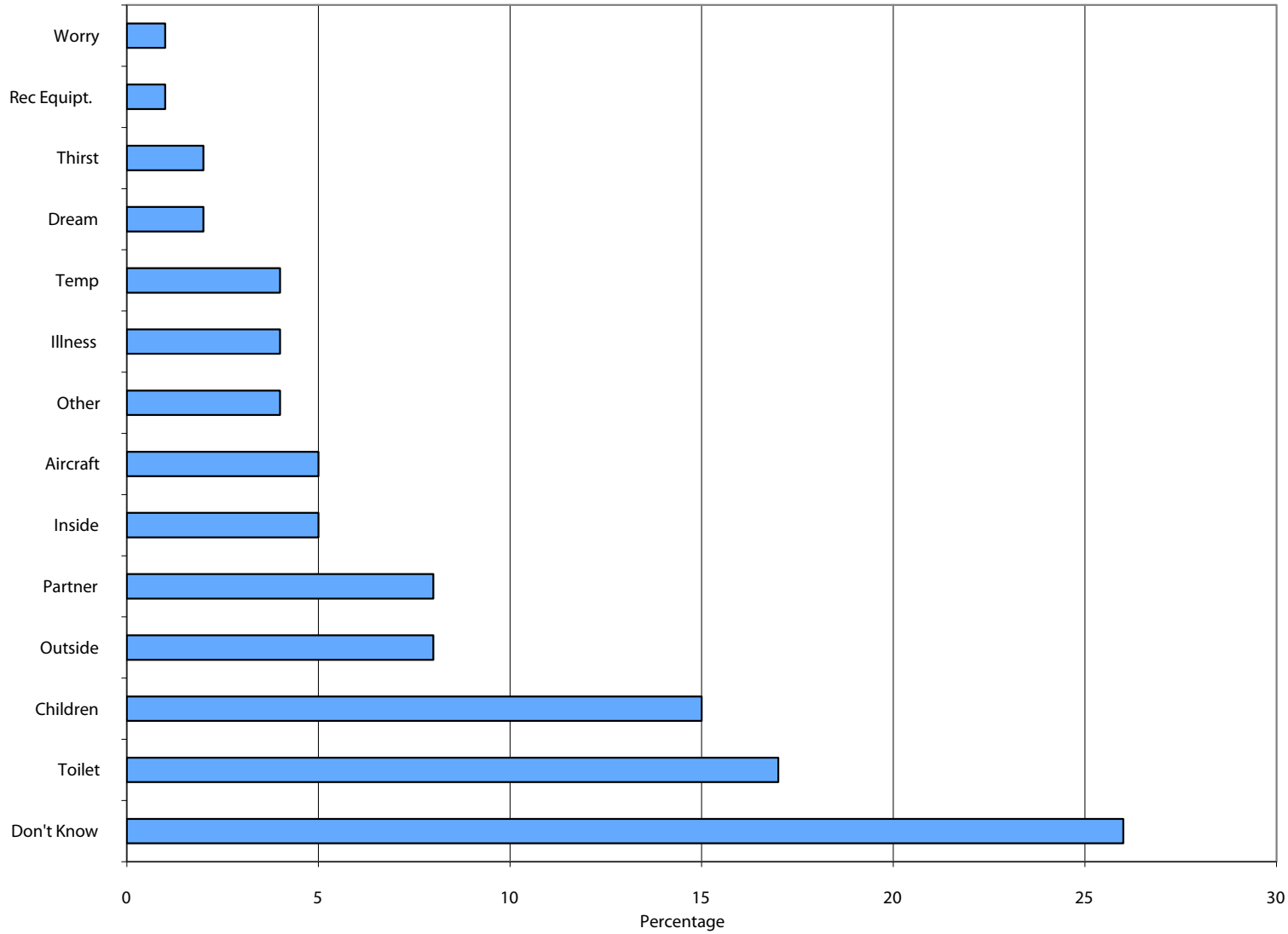
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9 Federal Interagency Committee on Noise (FICON), *Federal Agency Review of Selected Airport Noise Analysis Issues*, August 1992. Available: http://gsweventcenter.com/Draft_SEIR_References/1992_08_Federal_Interagency_Committee_on_Noise.pdf.

10 Federal Interagency Committee on Aircraft Noise (FICAN), *Effects of Aviation Noise on Awakenings from Sleep*, June 1997. Available: https://fican1.files.wordpress.com/2015/10/findings_awakenings_1997.pdf.

11 American National Standards Institute (ANSI), *Quantities and Procedures for Description and Measurement of Environmental Sound -- Part 6: Methods for Estimation of Awakenings Associated with Outdoor Noise Events Heard in Homes*, ANSI S12.9-2008/Part 6, 2008.

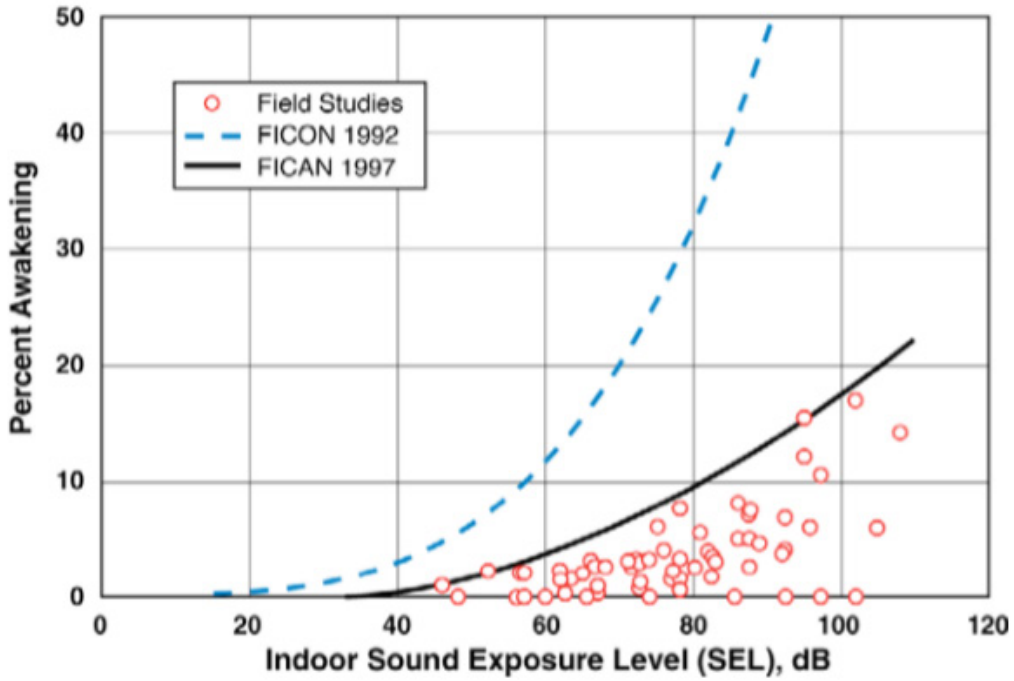
Cause of Reported Awakening



Source: Horne J.A., F.L. Pankhurst, L.A. Reyner, K. Hume, and I.D. Diamond, "A Field Study of Sleep Disturbance: Effects of Aircraft Noise and Other Factors on 5,742 Nights of Actimetrically Monitored Sleep in a Large Subject Sample," Sleep, 1994 Mar; 17(2):146-59, Figure 9

Prepared by: CDM Smith, October 2020

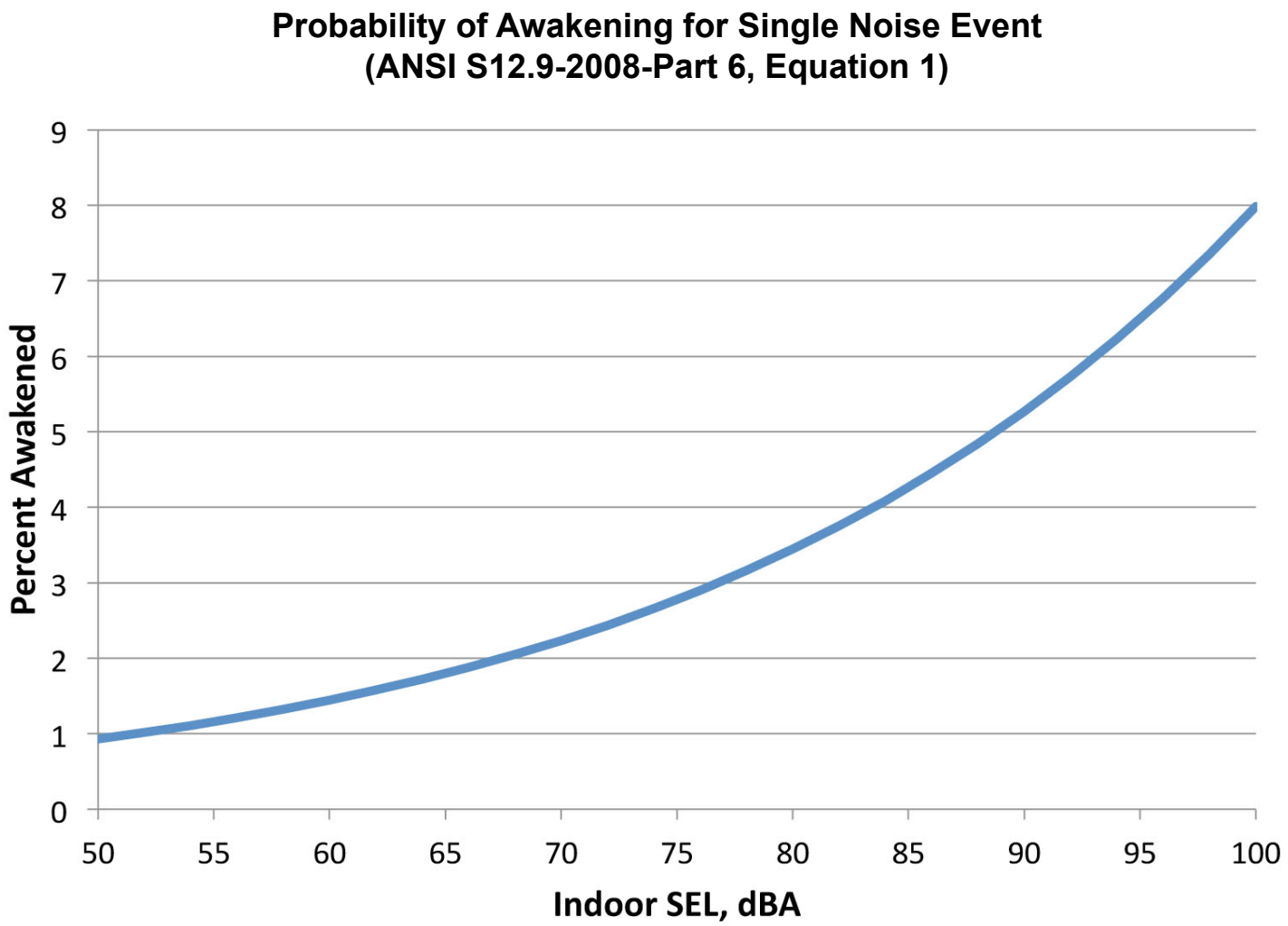
LAX Airfield and Terminal Modernization Project	Causes and Prevalence of All Awakenings	Figure **4.7.1-2**



Source: Federal Interagency Committee on Aircraft Noise (FICAN).
Effects of Aviation Noise on Awakenings from Sleep, June 1997

Prepared by: CDM Smith, October 2020

LAX Airfield and Terminal Modernization Project	FICAN Recommended Sleep Disturbance Curve	Figure **4.7.1-3**



Source: ANSI S12.9-2008/Part 6, Figure B.1
Prepared by: CDM Smith, October 2020

LAX Airfield and Terminal Modernization Project	ANSI Equation 1 Showing Percent of Population Awakened as a Function of Indoor Sound Exposure Level	Figure **4.7.1-4**

ANSI S12.9-2008 was withdrawn by the Acoustical Society of America (ASA) in 2018. The review committee concluded that it did not usefully predict transportation-noise-induced sleep disturbance for the following reasons:

- It was based on analysis of a relatively small amount of non-representative information about noise-induced sleep disturbance
- Its predictions of probabilities of "at least one awakening per night" cannot be generalized from one airport to another
- The predicted quantity ("at least one awakening per night") did not usefully distinguish degrees of sleep disturbance among preferred and alternate project actions
- Due to lack of cautions in the language of the Standard, its methods were readily misapplied, and its predictions of "at least one awakening per night" were easily over-interpreted
- The standard attempted to characterize an intuitively appealing form of objectively measured sleep disturbance but, in so doing, it failed to acknowledge the many complexities that impact sleep and other forms of sleep disturbance that are known to be sensitive to nighttime noise exposure
- The standard did not quantitatively address the roles of familiarity with noise sources and habituation to noise exposure as determinants of sleep disturbance

The ASA concluded that the method for calculating "at least one behavioral awakening per night" contained in the former ANSI Standard should no longer be relied upon for environmental impact assessment purposes.[12]

The FAA has initiated a research study to collect representative information on the effects of aircraft noise on sleep. This data will help the FAA update sleep standards. The study is expected to take approximately two years to complete, and the FAA is currently assessing comments received on what should be included in the study (the FAA closed the comment period on January 27, 2020).[13] Following completion of the study, it is anticipated that the FAA will consider the findings of the study relative to any potential updates to, or validation of, the national aviation noise policy.

With regard to addressing potential sleep disturbance impacts within this EIR, the above overview of various studies demonstrates that there has been, and still is, considerable debate within the scientific community and a lack of concurrence regarding the relationship between aircraft noise and sleep disturbance, especially as related to determining a definitive noise dose and the response relationship for sleep disturbance. Thus, even if noise events are measured using supplemental metrics (e.g., SEL, L_{max}, TA, etc.), there is no scientific concurrence on the appropriate "threshold" to compare such measurements against, when it comes to sleep disturbance. Additionally, there is presently no applicable regulatory agency that has established standards specific to sleep disturbance impacts for the purpose of the California Environmental Quality Act (CEQA), the National Environmental Policy Act (NEPA), or any other environmental compliance/assessment law. However, both the DNL noise metric and the CNEL noise metric, described above in Section 4.7.1.1.2, incorporate noise "penalties" to account for the increased sensitivity to noise events that occur during the more noise-sensitive nighttime periods such as when most sleeping typically occurs. There are established standards/thresholds that utilize DNL and CNEL as the accepted noise metric in evaluating noise impacts in environmental review documents, such as those under CEQA and NEPA. As described below in Section 4.7.1.4, CNEL is the noise metric used in determining

[12] Acoustical Society of America, *Rationale for Withdrawing ANSI/ASA S12.9-2008/Part 6 (A Technical Report prepared by ANSI-Accredited Standards Committee S12 and registered with ANSI),* July 22, 2018.

[13] U.S. Department of Transportation, Federal Aviation Administration, *Agency Information Collection Activities: Request for Comments; Clearance of a New Approval of Information Collection: National Sleep Study*, 84 Fed. Reg. 65453, November 27, 2019. Available: https://www.federalregister.gov/documents/2019/11/27/2019-25714/agency-information-collection-activities-requests-for-comments-clearance-of-a-new-approval-of.

the significance of aircraft noise impacts associated with the proposed Project. In the absence of any other accepted standards for sleep disturbance, for purposes of this EIR, LAWA uses the CNEL metric to address the potential for sleep disturbance impacts due to its application of penalties to noise events occurring during typical sleep hours.

Physiological Responses

Physiological responses are those measurable effects of noise on people that are realized as changes in pulse rate, blood pressure, etc. Although such effects can be induced and observed, the extent is not known to which these physiological responses cause harm or are a sign of harm. Generally, physiological responses are a reaction to a loud, short-term noise such as a rifle shot or a very loud jet overflight.

Health effects from noise have been studied around the world for over 30 years. Scientists have attempted to determine whether high noise levels can adversely affect human health apart from auditory damage. These research efforts have covered a broad range of potential impacts, from cardiovascular response to fetal weight to mortality. Although a relationship between noise and health effects seems plausible, it has yet to be convincingly demonstrated – that is, shown in a manner that can be repeated by other researchers while yielding similar results.

Although annoyance and sleep/speech interference have been acknowledged, health effects from noise, if they exist, are associated with a wide variety of other environmental stressors. Isolating the effects of aircraft noise alone as a source of long-term physiological change has proved to be nearly impossible. In a review of 30 studies conducted worldwide between 1993 and 1998,[14] a team of international researchers concluded that, while some findings suggest that noise can affect health, improved research concepts and methods are needed to verify or discredit such a relationship. The team of international researchers called for more study of the numerous environmental and behavioral factors than can confound, mediate, or moderate survey findings. Until science refines the research process, a direct link between aircraft noise exposure and non-auditory health effects remains to be demonstrated. Studies by Eriksson[15] and Jarup (HYENA Study)[16] have reported higher rates of hypertension with increasing aircraft noise levels. The HYENA Study identified that the effect occurred only for nighttime aircraft noise. In a 2010 journal article, Fidell, et al., reviewed the current science on predicting sleep disturbance and its effects and concluded:

> Epidemiological evidence does not yet support either reliable prediction of noise-induced sleep disturbance, or well-informed policy debate, much less a plausible technical rationale for regulatory action. The practical, population-level implications of noise-induced sleep disturbance and its consequences remain poorly understood due to design and other limitations of field studies of noise-induced sleep disturbance already undertaken, and to limitations of the statistical analyses performed to date. Published relationships used to assess the probability or prevalence of noise-induced awakening remain highly uncertain and unhelpfully imprecise. Considerable caution must be exercised in extrapolating conclusions about sleep disturbance that have been inferred from the behavior of relatively small and purposive samples of people living near a few airports to wider populations.[17]

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[14] Lercher P., Stansfeld, S.A., Thompson, S.J., "Non-Auditory Health Effects of Noise; Review of the 1993-1998 Period," *Noise Effects-98 Conference Proceedings*, p. 213, November 1998.

[15] Eriksson C., Rosenlund, M., Pershagen, G., et al., "Aircraft Noise and Incidence of Hypertension," *Epidemiology*, Volume 18, Number 6, p. 716-721, November 2007.

[16] Jarup L., Babisch W., Houthuijs D., et al. "Hypertension and Exposure to Noise Near Airports: the HYENA Study," *Environmental Health Perspectives*, Volume 116, Number 3, p. 320-333, March 2008. Available: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2265027/.

[17] Fidell S., Tabachnick, B., Peasons, K., "The State of the Art of Predicting Noise-Induced Sleep Disturbance in Field Settings," *Noise and Health*, Volume 12, Issue 47, p. 77-87, 2010.

In 2008, the ACRP, a part of the National Academies, published a synthesis on the effects of aircraft noise and concluded, "Despite decades of research, including review of old data and new research efforts, health effects of aviation noise continue to be an enigma. Most, if not all, current research concludes that it is yet impossible to determine causal relations between health disorders and noise exposure, despite well-founded hypotheses."[18]

In October 2013, two studies on cardiovascular disease associated with aircraft noise were published in the British Medical Journal. The first was done in the United Kingdom around Heathrow Airport in London, and the second was done in the United States as part of a multi-airport retrospective study led by researchers from Boston University and the Harvard School of Public Health as part of the Partnership for Air Transportation Noise and Emissions Reduction (PARTNER) program sponsored by the FAA. The U.S. study focused on Medicare patients, and the British study was based on the total population living around Heathrow. Both studies identified a correlation linking noise to cardiovascular disease, but due to limitations in the studies and the potential for alternative explanations of casual associations, both studies recommended that further research be done to better understand and strengthen the causal interpretation of the relationship between aircraft noise and cardiovascular disease. Neither study provided a definitive noise dose and response relationship that defines at what noise level cardiovascular health effects start and the rate of increase in response as noise level increases.[19]

With regard to addressing noise-related physiological effects within this EIR, the aforementioned British and U.S. studies provide some information linking noise to cardiovascular disease but, as noted above, still fall short of providing the definitive noise dose and the response relationship. There is presently no applicable regulatory agency that has established standards specific to physiological response for the purpose of CEQA, NEPA, or any other environmental compliance/assessment law. The absence of such regulations can be attributed, at least in part, to the uncertainty of the science.

Section 15145 of the State CEQA Guidelines directs lead agencies who find a particular impact too speculative after a thorough investigation to note this conclusion and terminate discussion of the impact. The discussion above shows that, at this time, the effects of noise on health are too speculative for further evaluation in this CEQA document.

Annoyance

Annoyance is the most difficult of all noise responses to describe. Annoyance is an individual characteristic and can vary widely from person to person. What one person considers tolerable can be quite unbearable to another of equal hearing capability. The level of annoyance, of course, depends on the characteristics of the noise (i.e., loudness, frequency, time, and duration), and how much activity interference (e.g., speech interference and sleep interference) results from the noise. However, the level of annoyance is also a function of the attitude of the receiver. Personal sensitivity to noise varies widely. It has been estimated that 2 to 10 percent of the population is highly susceptible to annoyance from any noise not of their own making, while approximately 20 percent are unaffected by noise. Attitudes are affected by the relationship between the person and the noise source (e.g., is it our dog barking or the neighbor's dog?). Whether one believes that someone is trying to abate the noise will also affect their level of annoyance.

[18] Transportation Research Board of the National Academies, Airport Cooperative Research Program, *ACRP Synthesis 9, Effects of Aircraft Noise: Research Update on Selected Topics,* 2008.

[19] County of Orange, *Draft Environmental Impact Report No. 617, John Wayne Airport Settlement Agreement Amendment*, (SCH 2001111135), Appendix C - Noise Analysis Technical Report, April 2014.

There is no current research to suggest that there is a better metric than DNL to relate noise to annoyance levels. **Figure 4.7.1-5** relates DNL noise levels to community response from two surveys. One of the survey curves presented in Figure 4.7.1-5 is the well-known Schultz Curve. It displays the percent of a populace that can be expected to be annoyed by various DNL values for residential land use with outdoor activity areas. At 65 DNL, the Schultz Curve predicts approximately 14 percent of the exposed population reporting themselves to be "highly annoyed." At 60 DNL, this decreases to approximately 8 percent of the population.

As shown in Figure 4.7.1-5, the data used to develop the Schultz Curve (and recent updates) have a very wide range of scatter, with communities near some airports reporting much higher percentages of population highly annoyed at these noise exposure levels. For example, under contract to the FAA, Bolt Beranek & Newman conducted community attitude surveys in the residential areas south of John Wayne Airport in Orange County in 1981 as part of a study of possible "power cutback" departure procedures. That study concluded that the surveyed population had more highly annoyed individuals at various noise levels than would be predicted by the Schultz Curve. When plotted similar to the Schultz Curve, this survey indicated the populations in these areas were approximately 5 dBA more sensitive to noise than the average population predicted by the Schultz Curve. Although the precise reasons for this increased noise sensitivity were not identified, it is possible that non-acoustic factors, including political or the socio-economic status of the surveyed population, may have played an important role in increasing the sensitivity of this community during the period of the survey. Annoyance levels have never been correlated statistically to single event noise exposure levels in airport-related studies.

4.7.1.2 Methodology

4.7.1.2.1 Aircraft Noise Modeling

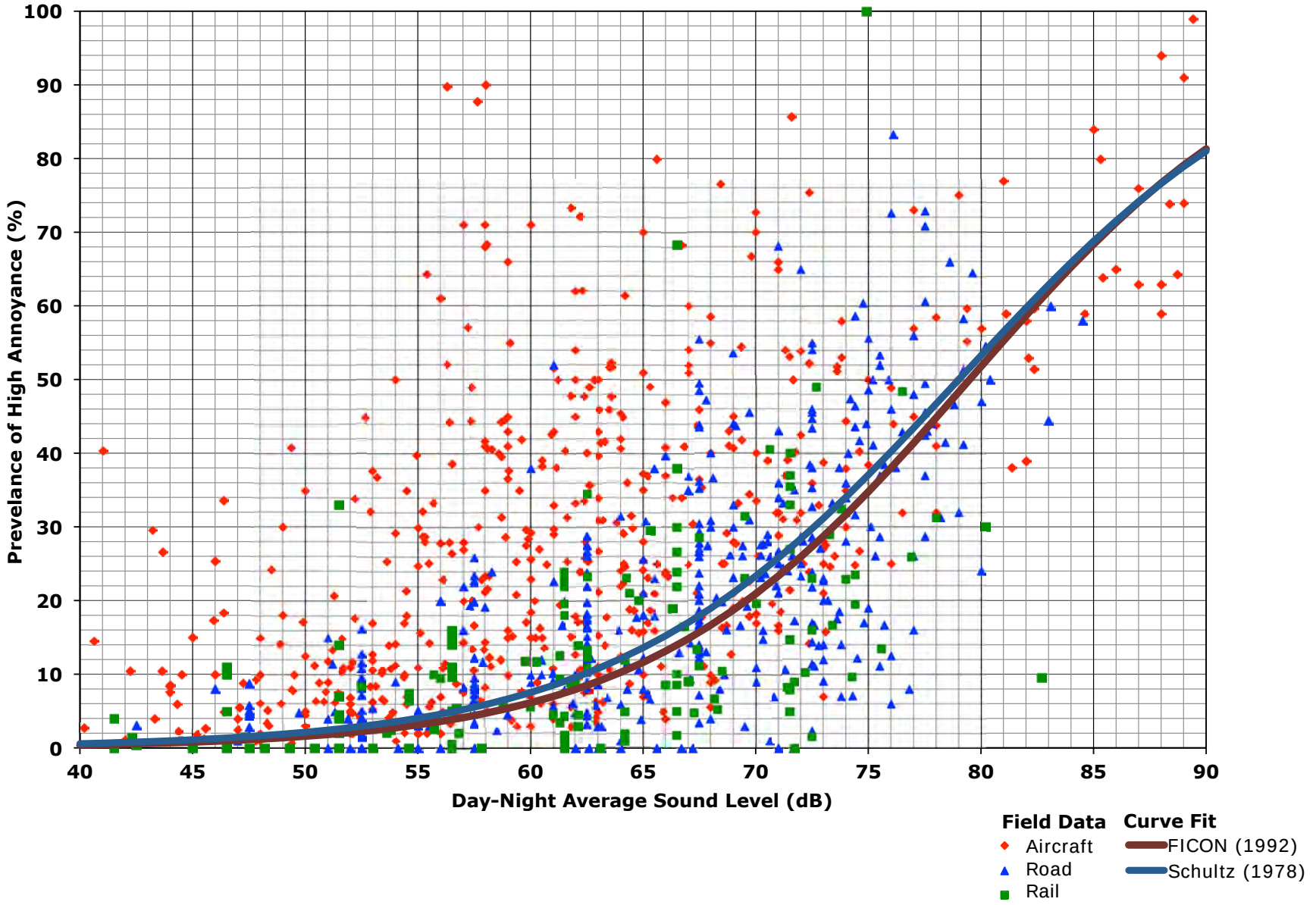
The methodology for analyzing noise from aircraft follows a generally accepted process that includes the application of a computer model to estimate noise levels associated with a project, and comparison of the results to noise levels of existing baseline conditions in 2018. Modeled aircraft CNEL noise exposure maps are used as planning tools to allow the comparison of different scenarios of operations over a broad geographical area. The aircraft noise modeling analysis methodology outlined in FAR Part 150, *Airport Noise Compatibility Planning*,[20] and FAA's *1050.1F Desk Reference, Version 2* (Chapter 11, Sections 11.1 through 11.3),[21] was followed, where applicable.

The evaluation of project-related noise exposure levels due to LAX aircraft operations utilized the latest version of the FAA Aviation Environmental Design Tool (AEDT), which for this project is Version 3b. AEDT is a software system that models aircraft performance in space and time to estimate fuel consumption, emissions, noise, and air quality consequences.[22] AEDT has an extensive database of civilian and military aircraft noise characteristics and incorporates advanced plotting features.

[20] 14 CFR Part 150, A*irport Noise Compatibility Planning*. Available: https://www.ecfr.gov/cgi-bin/text-idx?SID=f8e6df268e3dad2edb848f61b9a0fb51&mc=true&node=pt14.3.150&rgn=div5.

[21] U.S. Department of Transportation, Federal Aviation Administration, *1050.1F Desk Reference, Version 2,* February 2020. Available: https://www.faa.gov/about/office_org/headquarters_offices/apl/environ_policy_guidance/policy/faa_nepa_order/desk_ref/.

[22] U.S. Department of Transportation, Federal Aviation Administration, *Aviation Environmental Design Tool webpage*. Available: https://aedt.faa.gov/.



Source: County of Orange, Draft Environmental Impact Report No. 617 – John Wayne Airport Settlement Agreement Amendment, Appendix C – Noise Analysis Technical Report, prepared by Mestre Greve Associated Division of Landrum and Brown, April 2014

Prepared by: CDM Smith, October 2020

LAX Airfield and Terminal Modernization Project	Percent of Population Highly Annoyed as a Function of DNL	Figure **4.7.1-5**

AEDT requires the input of the physical and operational characteristics of the airport. Physical characteristics include runway coordinates, airport altitude, and temperature, and optionally, topographical data. Operational characteristics include various types of aircraft data. This includes not only the aircraft types and flight tracks, but also departure procedures, arrival procedures, and stage lengths (flight distance) that are specific to the operations at the airport. **Appendix F.1** describes the AEDT modeling parameters and input data used in this analysis.

Utilizing the FAA's AEDT Version 3b, average annual daily noise contours were developed for (i) existing baseline conditions in 2018, (ii) conditions in 2028 with implementation of the proposed Project, and (iii) conditions in 2028 without Project implementation (i.e., the No Project Alternative), based upon the existing facilities at LAX and the number and type of annual operations that were projected for 2028 under both development scenarios (i.e., with Project and without Project; see **Appendix F.1**).[23] It is important to note that, while the aircraft noise impacts analysis compares future (2028) noise levels associated with the proposed Project to existing baseline conditions, the change in future (2028) aircraft noise conditions compared to existing baseline conditions is attributable to growth in activity anticipated to occur at LAX by 2028 with or without the proposed Project. In other words, the proposed Project itself would have no effect on noise levels associated with aircraft operations; rather, the change in noise levels from 2018 to 2028 aircraft operations will be entirely attributable to growth in aviation activity that will occur with or without the proposed Project. Because of this, estimated aircraft noise levels in 2028 with implementation of the proposed Project are the same as estimated aircraft noise levels in 2028 without the proposed Project.

The noise modeling conducted within AEDT took the effects of terrain into account. Terrain data were obtained from the U.S. Geological Survey (USGS) National Map Viewer. This is a user selection within AEDT, and AEDT uses terrain data to adjust the ground level under the flight path. Terrain data affects the vertical distance between aircraft and a "receiver" on the ground. This, in turn, affects assumptions about how noise propagates over ground.

In addition, the impacts of temporary changes in aircraft noise, due to reassignment of aircraft operations to other runways at LAX during temporary closure of Runway 6L-24R (in 2023) and Runway 6R-24L (in 2024), are evaluated in Section 4.7.1.5.

4.7.1.2.2 Changes in CNEL

LAX aircraft operations data were developed for future years using SIMMOD[24] and provided for the noise analysis by Ricondo & Associates, Inc. (A description of the airfield simulation analysis is provided in **Appendix B.2**). Using the SIMMOD results, noise analyses were conducted with AEDT Version 3b for the baseline year and 2028. For existing baseline conditions (calendar year 2018), data from the LAX Aircraft Noise and Operations Maintenance System (ANOMS) was utilized for the AEDT modeling. For each noise modeling scenario, AEDT produced annual average daily aircraft noise exposure results to address each of the following types of impacts:

- Noise exposure contours representing the area in which aircraft noise exposure is at or above 65 dBA in terms of CNEL to assess land use compatibility changes associated with the proposed Project

[23] **Appendix F.1** includes annual aircraft operations (see Table 4), which applies to both the proposed Project and the No Project Alternative.

[24] SIMMOD is an airspace and airfield simulation model developed, refined and validated by the FAA and ATAC Corporation for use in airport planning and analysis. The model is used to estimate capacity, travel time, delay and fuel consumption resulting from aircraft operations. It is used to investigate causal relationships between airport facility improvements, air traffic control procedures and their effect on aircraft operations while measuring aircraft delay.

- Aircraft noise exposure levels at distinct grid locations within the 65 CNEL contour to determine grid locations experiencing changes in noise exposure (i.e., increases of 1.5 dBA CNEL or more) to evaluate the potential for a significant impact due to the proposed Project[25]

In addition, construction of the improvements in the north airfield would require the temporary, short-term closure (approximately 4.5 months) of Runway 6L-24R in 2023 and Runway 6R-24L in 2024. During each runway closure, aircraft takeoff and landings would occur from the remaining three runways at LAX, which would temporarily change the aircraft noise contours projected for 2023 and 2024. Potential impacts associated with these changes were evaluated qualitatively.

Potential noise impacts due to changes in aircraft operations expected by the proposed Project were evaluated with respect to thresholds of significance characterized by compatible levels of noise for aircraft operations at an airport and changes in the CNEL, as further described in Section 4.7.1.4 below.

4.7.1.2.3 Classroom Disruption

The evaluation of projected aircraft noise impacts associated with the proposed Project includes an analysis of potential classroom disruption, using metrics that address speech interference, in particular L_{max}, L_{eq}, and TA decibel levels. The metrics describe the peak noise level heard during a period of time (typically an individual noise event), the un-penalized average noise level present during a period of time, and the amount of time the noise level at a given location exceeds a specific decibel level, respectively. Schools that would be exposed to interior single event maximum noise levels of 55 dBA and 65 dBA, as well as to interior hourly average noise levels of 35 dBA $L_{eq}(h)$ or more during typical school hours (8:00 a.m. and 4:00 p.m.) were identified.

The interior single event maximum noise levels of 55 dBA and 65 dBA are based on an August 1992 report published by FICON,[26] a precursor to FICAN. The FICON noise levels reflect that aircraft noise is intermittent, and individual aircraft noise events might interrupt spoken communication among small and large group instruction. Classroom learning occurs in large group settings and in one-on-one or small group discussions. In large group settings, it is assumed that the teacher must be heard approximately 20 feet away; in small group communications, the distance that the voice must carry was assumed to be approximately 6 feet. The intermittent noise criteria include two different thresholds. The FICON report showed that, at a distance of 20 feet (the large group criterion), the in-classroom noise level should not exceed an L_{max} of 55 dBA. At a distance of 6 feet (the small group criterion), the threshold increases to 65 dBA L_{max}. Pre- and post-measurement data from LAX school sound insulation efforts show that the average noise reduction at schools near LAX is 29 dBA with windows closed. In order to attain a level of below 55 dBA and 65 dBA inside the classroom, exterior noise levels would need to be less than 84 and 94 dBA, respectively.

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[25] The FAA's 1050.1F Desk Reference, Version 2, requires evaluation of an increase in noise by 1.5 dB or more for areas where existing noise levels are at or greater than 65.0 dB DNL (CNEL is used in California). Based on the FICON 1992 document entitled *Federal Interagency Review of Selected Airport Noise Analysis Issues*, the FAA considers a 1.5 dB increase in the 65 DNL or greater contour to be discernable. The Desk Reference also requires evaluation of an increase in noise by 3.0 dB or more for areas where existing noise levels are between 60 dB and 65.0 dB DNL (CNEL is used in California), but only when DNL 1.5 dB increases are documented within the DNL 65 dB contour. Based on the FICON 1992 document entitled *Federal Interagency Review of Selected Airport Noise Analysis Issues*, the FAA considers a 3.0 dB increase in the 60-65 DNL or greater contour to be discernable. As discussed in Section 4.7.1.5, the proposed Project would not result in a 1.5 dB increase within the 65 dB contour; therefore, evaluation of 3.0 dB increases does not apply to this Project.

[26] Federal Interagency Committee on Noise (FICON), *Federal Agency Review of Selected Airport Noise Analysis Issues*, August 1992, Table 3.3, p. 3-9. Available: http://gsweventcenter.com/Draft_SEIR_References/1992_08_Federal_Interagency_Committee_on_Noise.pdf.

The interior hourly average noise level of 35 dBA $L_{eq}(h)$ or more during typical school hours (8:00 a.m. and 4:00 p.m.) is based on the ANSI standard,[27] which was designed to keep interfering steady-state noise in the classroom at or below an hourly L_{eq} of 35 dBA.

4.7.1.3 Existing Conditions

4.7.1.3.1 Regulatory Setting

4.7.1.3.1.1 Federal

Federal Aviation Regulations (FAR), Part 36

FAR Part 36, "Noise Standards: Aircraft Type and Airworthiness Certification," sets noise standards for issuance of new aircraft type certificates. Aircraft are certified as Stage 1, Stage 2, Stage 3, Stage 4, or Stage 5 aircraft depending on their noise level, weight, number of engines and, in some cases, number of passengers. Stage 1 aircraft, which are the noisiest aircraft, are no longer permitted to operate in the U.S., and Stage 2 aircraft have been phased out of the U.S. fleet (with an exception for Hawaii and Alaska and limited applicability to certain lighter aircrafts, discussed below). Although aircraft meeting higher stage noise certifications specified in Part 36 standards are noticeably quieter than many of the older lower stage aircraft, the regulations make no determination that such aircraft are acceptably quiet for operation at any given airport.

Federal Aviation Administration (FAA) Noise Abatement Policy

This policy establishes the noise abatement authority and responsibilities of the federal government, airport proprietors, state and local governments, air carriers, air travelers and shippers, and airport area residents and prospective residents. It emphasizes that the FAA's role is primarily one of regulating noise at its source (the aircraft), plus supporting local efforts to develop airport noise abatement plans. The FAA gives high priority in the allocation of Airport Development Aid Program (ADAP) funds to projects designed to ensure compatible use of land near airports, but it is the role of state and local governments and airport proprietors to undertake the land use and operational actions necessary to promote compatibility.

Aviation Safety and Noise Abatement Act of 1979

This Act establishes funding for noise compatibility planning and sets the requirements by which airport operators can apply for funding. This is also the law by which Congress mandated that the FAA develop an airport community noise metric to be used by all federal agencies assessing or regulating aircraft noise. The result was DNL. Because California already had a well-established airport community noise metric in CNEL, and because CNEL and DNL are so similar, FAA expressly allows CNEL to be used in lieu of DNL in noise assessments performed for California airports.[28]

Federal Aviation Regulations, Part 150

In recognition of the national aircraft noise issue, the United States Congress passed the Aviation Safety and Noise Abatement Act of 1979 (ASNA), which mandated that the FAA establish a single system for measuring noise around airports and determining noise exposure to individuals. ASNA also required the FAA to identify land uses that are normally compatible with various noise levels. These regulations are

[27] American National Standards Institute, Accredited Standards Committee S12 Noise, *Acoustical Performance Criteria, Design Requirements, and Guidelines for Schools*, (ANSI S12.60.2002), June 2002.

[28] U.S. Department of Transportation, Federal Aviation Administration, *1050.1F Desk Reference, Version 2*, page 11-2, February 2020. Available: https://www.faa.gov/about/office_org/headquarters_offices/apl/environ_policy_guidance/policy/faa_nepa_order/desk_ref/media/desk-ref.pdf.

codified in Title 14 of CFR Part 150 (14 CFR Part 150 or simply Part 150), "Airport Noise Compatibility Planning."[29]

Part 150 establishes the average annual DNL to determine cumulative noise exposure from airports. In Part 150, the FAA established compatibility guidelines for aircraft noise exposure levels with land uses in the vicinity of an airport. These guidelines consider all land uses to be compatible with noise levels less than 65 DNL. Some land uses, such as residences, schools, hospitals, and places of worship, are considered to be noise-sensitive and non-compatible with aircraft noise exposure levels at and above 65 DNL. Governmental services, transportation, parking, and some outdoor recreational uses are considered compatible with noise levels up to 70 DNL. However, the FAA guidelines indicate that ultimately "the responsibility for determining the acceptability and permissible land uses remains with the local authorities." **Table 4.7.1-2** presents the Part 150 noise and land use compatibility charts to be used for land use planning with respect to aircraft noise.

Table 4.7.1-2
Federal Aviation Regulation Part 150 Land Use Guidelines

Land Use	Yearly Day-Night Average Sound Level (L_{dn} dBA)					
	<65	65–70	70–75	75–80	80–85	>85
Residential						
Residential, other than mobile homes and transient lodgings	Y	N[1]	N[1]	N	N	N
Mobile home parks	Y	N	N	N	N	N
Transient lodgings	Y	N[1]	N[1]	N[1]	N	N
Public Use						
Schools	Y	N[1]	N[1]	N	N	N
Hospitals and nursing homes	Y	25	30	N	N	N
Churches, auditoriums, and concert halls	Y	25	30	N	N	N
Governmental services	Y	Y	25	30	N	N
Transportation	Y	Y	Y[2]	Y[3]	Y[4]	Y[4]
Parking	Y	Y	Y[2]	Y[3]	Y[4]	N
Commercial Use						
Offices, business and professional	Y	Y	25	30	N	N
Wholesale and retail—building materials, hardware and farm equipment	Y	Y	Y[2]	Y[3]	Y[4]	N
Retail trade—general	Y	Y	25	30	N	N
Utilities	Y	Y	Y[2]	Y[3]	Y[4]	N
Communication	Y	Y	25	30	N	N
Manufacturing and Production						
Manufacturing, general	Y	Y	Y[2]	Y[3]	Y[4]	N
Photographic and optical	Y	Y	25	30	N	N
Agriculture (except livestock) and forestry	Y	Y[6]	Y[7]	Y[8]	Y[8]	Y[8]
Livestock farming and breeding	Y	Y[6]	Y[7]	N	N	N
Mining and fishing, resource production and extraction	Y	Y	Y	Y	Y	Y

[29] 14 CFR Part 150, *Airport Noise Compatibility Planning*. Available: https://www.ecfr.gov/cgi-bin/text-idx?SID=f8e6df268e3dad2edb848f61b9a0fb51&mc=true&node=pt14.3.150&rgn=div5.

Table 4.7.1-2
Federal Aviation Regulation Part 150 Land Use Guidelines

Land Use	Yearly Day-Night Average Sound Level (L_{dn} dBA)					
	<65	65–70	70–75	75–80	80–85	>85
Recreational						
Outdoor sports arenas and spectator sports	Y	Y[5]	Y[5]	N	N	N
Outdoor music shells, amphitheaters	Y	N	N	N	N	N
Nature exhibits and zoos	Y	Y	N	N	N	N
Amusements, parks, resorts and camps	Y	Y	Y	N	N	N
Golf courses, riding stables and water recreation	Y	Y	25	30	N	N

Source: 14 CFR Part 150, Airport Noise Compatibility Planning Appendix A to Part 150—Noise Exposure Maps, Table 1—Land Use Compatibility with Yearly Day-Night Average Sound Levels. Available: https://www.ecfr.gov/cgi-bin/text-idx?SID=f8e6df268e3dad2edb848f61b9a0fb51&mc=true&node=pt14.3.150&rgn=div5.

Notes:

1 Where the community determines that residential or school uses must be allowed, measures to achieve outdoor to indoor Noise Level Reduction (NLR) of at least 25 dB and 30 dB should be incorporated into building codes and be considered in individual approvals. Normal residential construction can be expected to provide an NLR of 20 dB; thus, the reduction requirements are often stated as 5, 10 or 15 dB over standard construction and normally assume mechanical ventilation and closed windows year-round. However, the use of NLR criteria will not eliminate outdoor noise problems.

2 Measures to achieve NLR 25 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise-sensitive areas or where the normal noise level is low.

3 Measures to achieve NLR of 30 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise-sensitive areas or where the normal noise level is low.

4 Measures to achieve NLR 35 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise-sensitive areas or where the normal level is low.

5 Land use compatible provided special sound reinforcement systems are installed.

6 Residential buildings require an NLR of 25.

7 Residential buildings require an NLR of 30.

8 Residential buildings not permitted.

The designations contained in this table do not constitute a federal determination that any use of land covered by the program is acceptable or unacceptable under federal, state, or local law. The responsibility for determining the acceptable and permissible land uses and the relationship between specific properties and specific noise contours rests with the local authorities. FAA determinations under Part 150 are not intended to substitute federally-determined land uses for those determined to be appropriate by local authorities in response to locally-determined needs and values in achieving noise compatible land uses.

Key:
Y (Yes)
N (No)

NLR 25, 30, or 35 = Land use and related structures generally compatible; measures to achieve NLR of 25, 30, or 35 dBA must be incorporated into design and construction of structure.
Abbreviations: Ldn - day night average sound level; dBA - A-weighted noise level.

In 1981, the Los Angeles City Department of Airports (now Los Angeles World Airports [LAWA]) in conjunction with the Los Angeles County Department of Regional Planning and the cities of El Segundo, Hawthorne, and Inglewood undertook an Airport Noise Control and Land Use Compatibility (ANCLUC) Study to quantify LAX's aircraft noise exposure and to identify measures to mitigate aircraft noise impacts on the noise-sensitive land uses surrounding LAX. The ANCLUC study process was the predecessor to the FAR Part 150 process. The LAX ANCLUC process was completed in June 1984. The LAX Noise Exposure Map (NEM) included in the ANCLUC and submitted under FAR Part 150 was accepted by FAA on October 16, 1984. On April 13, 1985, the FAA issued a record of approval approving 28 of the recommended measures

in the LAX Noise Compatibility Program (NCP). LAWA conducted an LAX Part 150 NEM Update in 2015. LAWA received formal acceptance of the NEM from the FAA on February 18, 2016.[30]

Federal Aviation Administration Order 1050.1F

FAA Order 1050.1F provides FAA's policies and procedures for evaluating environmental impacts of all agency actions in compliance with NEPA and the implementing regulations issued by the federal Council on Environmental Quality (CEQ).[31] FAA Order 1050.1F identifies significance thresholds for aircraft noise. These thresholds are based on the annual average daily DNL. In accordance with FAA Order 1050.1F, a proposed action would have a significant noise impact if it would cause a noise-sensitive land use that is already located within the 65 DNL noise contour to experience an increase in noise of DNL 1.5 dBA or more, or if it would newly expose a noise-sensitive land use to the DNL 65 dBA level due to an DNL 1.5 dBA or greater increase. The Order provides for the use of CNEL instead of DNL in California.

In 1992, FICON recommended that, in addition to significant impacts, less-than-significant noise level changes be identified for noise-sensitive locations exposed to project-related increases in noise levels.[32] FICON recommended reporting any changes in DNL of 3 dBA or more between 60 and 65 DNL, and increases of DNL 5 dBA or more between 45 and 60 DNL. The FAA's subsequent Air Traffic Noise Screening (ATNS) procedure[33] further emphasized the importance of these changes in DNL, so that they also are now included in FAA Order 1050.1F. These recommendations only apply to cases where the significance threshold (increase of 1.5 dBA or more within the 65 dBA DNL contour) is met or exceeded.

Airport Noise and Capacity Act of 1990

The Airport Noise and Capacity Act of 1990 (ANCA or "the Noise Act") (49 U.S.C. 47521 et seq.) sets forth several provisions related to the restriction of aircraft activities at airports. One of the most notable aspects of ANCA is that it further regulates the local imposition of noise and access restrictions proposed after its enactment (October 1990).[34]

NextGen Southern California Metroplex

In 2003, Congress directed the development of a "Next Generation Air Transportation System." NextGen, as it is now called, was intended to improve aviation safety and efficiency through the use of ground-based and, increasingly, space-based technology to improve the way aircraft navigate complex metropolitan areas (Metroplexes) in the United States. An important part of the NextGen initiative is the development of new airspace and air traffic procedures.

FAA's approach to the mandate from Congress was to identify multiple Metroplex areas in the United States. Each of the 21 Metroplexes includes one or more commercial airports that serve at least one major city. LAX, along with a number of other airports, comprise the "Southern California Metroplex." The Southern California Metroplex Project is the FAA's proposal to improve the efficiency and safety of air traffic into and out of the Southern California area. A key feature of the Southern California Metroplex Project is to create more repeatable and predictable flight paths, both vertically and laterally.

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30 Los Angeles World Airports, *LAX Part 150 Noise Exposure Map Update*. Available: https://www.lawa.org/en/lawa-environment/noise-management/lawa-noise-management-lax/lax-part-150-noise-exposure-map-update.

31 U.S. Department of Transportation, Federal Aviation Administration, *Order 1050.1F, Environmental Impacts: Policies and Procedures* July 16, 2015. Available: https://www.faa.gov/documentLibrary/media/Order/FAA_Order_1050_1F.pdf.

32 Federal Interagency Committee on Noise (FICON), *Federal Agency Review of Selected Airport Noise Analysis Issues*, August 1992. Available: http://gsweventcenter.com/Draft_SEIR_References/1992_08_Federal_Interagency_Committee_on_Noise.pdf.

33 U.S. Department of Transportation, Federal Aviation Administration, *ATNS Air Traffic Noise Screening Model, Version 2.0 User Manual*, January 1999.

34 Among the provisions of ANCA, restrictions on Stage 3 aircraft must be fully analyzed in a study as detailed in 14 CFR Part 161 (a "161 Study") and approved by FAA.

The Southern California Metroplex Project is completely separate from the proposed Project and is not within the control of LAWA. Flight path procedures are dictated by the FAA, taking into account considerations of operational, safety, and air traffic control procedures. An airport operator, which in this case is LAWA, has no authority to regulate flight paths; therefore, although an airport may advocate for certain noise abatement flight paths to reduce noise, the request must be investigated for its impact on the National Airspace System Plan (NASP). Any new flight path procedures are implemented at the discretion of individual airlines after approval by the FAA. Additionally, the FAA, by law, has the sole authority to manage the Air Traffic Control (ATC) system and the navigable airspace in the United States; therefore, LAWA cannot restrict access to "noisier" aircraft or dictate departure routes. At LAX and all commercial airports, from the time an aircraft departs the terminal and enters the taxiway and runway system, and throughout its flight to, and arrival at the gate of the destination airport, the aircraft moves only by instruction and permission of the FAA, and pursuant to the direction of FAA personnel (not airport personnel). Implementation of the proposed Project would not alter flight path procedures at LAX. In summary, the FAA Southern California Metroplex Project does not affect, nor would it be affected by, the proposed Project.[35]

4.7.1.3.1.2 State

California Airport Noise Regulations

Title 21 of the California Code of Regulations, Subchapter 6 (also known as the California Airport Noise Standards) defines incompatible noise levels as exposure of nearby communities to noise levels of 65 CNEL or greater. Land use incompatibility is most likely to occur for most types of noise-sensitive uses when they are within the 65 CNEL noise contour. The 65 CNEL standard is also referenced in the California Department of Transportation (Caltrans) California Airport Land Use Planning Handbook (Caltrans Handbook) as the basic limit of acceptable noise levels for residential and other noise-sensitive uses within an urban area.[36]

4.7.1.3.1.3 Local

Los Angeles County Airport Land Use Plan

The State Aeronautics Act mandates that each county containing a public airport have an Airport Land Use Commission (ALUC), which is required to coordinate planning for the areas surrounding public use airports.[37] The Los Angeles County Regional Planning Commission is the designated ALUC for Los Angeles County, and is responsible for adopting Airport Land Use Compatibility Plans (ALUCPs) for the airports within Los Angeles County. ALUCPs provide guidance on compatible land uses surrounding airports to protect the health and safety of people and property within the vicinity of an airport, as well as the public in general. An ALUCP focuses on a defined area around each airport known as the Airport Influence Area (AIA). The AIA is comprised of noise, safety, airspace protection, and overflight factors.

The ALUC has no jurisdiction over the operation of airports or over existing land uses, regardless of whether or not such uses are incompatible with airport activities. Once ALUCPs have been adopted by the ALUC, local agencies with land located within the AIA boundary for any of the airports must, by law, amend their planning documents to conform to the applicable ALUCP or make special findings in accordance with state law, to override the ALUCP policies with a two-thirds vote of the local agency's governing body.

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35 Additional information regarding implementation of the Southern California Metroplex Project as related to LAX and its impacts to surrounding areas is available at https://www.faa.gov/air_traffic/community_involvement/socal/.

36 California Department of Transportation, Division of Aeronautics, *California Airport Land Use Planning Handbook*, Section 4.2, Noise, October 2011. Available: https://dot.ca.gov/-/media/dot-media/programs/aeronautics/documents/californiaairportlanduseplanninghandbook-a11y.pdf.

37 California Public Utilities Code, Sections 21670 et. seq.

The Los Angeles County Airport Land Use Plan (ALUP) established a planning boundary for each commercial airport within Los Angeles County to delineate areas subject to noise impacts and safety hazards; specifically, the planning boundaries encompass the area within the airport's 65 CNEL noise contour and areas within the Runway Protection Zones (RPZs). Those noise and safety areas, together, determine the AIA specific to each airport. The ALUP is implemented by the applicable jurisdiction through its General Plan, Specific Plan(s), and zoning ordinance. Amendments to a specific plan or General Plan within an airport's AIA require review by the ALUC and a Consistency Determination with the ALUP.

The ALUP includes a Land Use Compatibility table (see **Table 4.7.1-3**), and policies that require new uses to adhere to the criteria set forth in the table and encourage the removal of incompatible land uses.

Table 4.7.1-3
Los Angeles County Airport Land Use Plan: Land Use Compatibility Table

Land Use	Community Noise Exposure (dB)					
	55	60	65	70	75	
Residential						
Educational Facilities						
Commercial						
Industrial						
Agriculture						
Recreation						

Source: Los Angeles County Airport Land Use Commission, *Los Angeles County Airport Land Use Plan*, December 1, 2004. Available: http://planning.lacounty.gov/assets/upl/data/pd_alup.pdf.

Note: Consider FAR Part 150 for commercial and recreational uses above the 75 CNEL.

Color Key:
- Satisfactory
- Caution. Review Noise Insulation Needs
- Avoid Land Use Unless Related to Airport Services

City of Los Angeles General Plan

The City of Los Angeles's General Plan contains eleven elements that provide guidance and policies to balance the needs of a growing City and the quality of life for its residents. The Noise Element of the General Plan provides goals and policies to guide compatible land uses and the incorporation of noise control (attenuation) measures for new uses to protect people living and working in the City from excessive noise levels. The Noise Element describes airport-related noise management programs and identifies noise sources and noise management measures. It also provides guidelines for noise management within Los Angeles. The Noise Element includes goals, objectives, and policies that facilitate consideration of noise and noise-mitigating measures when making land use planning decisions so as to minimize human exposure to excessive noise. The Noise Element also includes Guidelines for Noise Compatible Land Uses (see **Table 4.7.1-4**) to help guide determination of appropriate land use and mitigation measures based on existing or anticipated ambient noise levels.

Table 4.7.1-4
City of Los Angeles Guidelines for Noise Compatible Land Uses

Land Use Category	Day-Night Average Exterior Sound Level (CNEL dB)						
	50	55	60	65	70	75	80
Residential Single Family, Duplex, Mobile Home	A	C	C	C	N	U	U
Residential Multi-Family	A	A	C	C	N	U	U
Transient Lodging, Motel, Hotel	A	A	C	C	N	U	U
School, Library, Church, Hospital, Nursing Home	A	A	C	C	N	N	U
Auditorium, Concert Hall, Amphitheater	C	C	C	C/N	U	U	U
Sports Arena, Outdoor Spectator Sports	C	C	C	C	C/U	U	U
Playground, Neighborhood Park	A	A	A	A/N	N	N/U	U
Golf Course, Riding Stable, Water Recreation, Cemetery	A	A	A	A	N	A/N	U
Office Building, Business, Commercial, Professional	A	A	A	A/C	C	C/N	N
Agriculture, Industrial, Manufacturing, Utilities	A	A	A	A	A/C	C/N	N

Source: City of Los Angeles, Department of City Planning, *Noise Element of the Los Angeles City General Plan,* adopted February 3, 1999. Available: https://planning.lacity.org/odocument/b49a8631-19b2-4477-8c7f-08b48093cddd/Noise_Element.pdf.

Key:
A = Normally acceptable. Specified land use is satisfactory, based upon assumption buildings involved are conventional construction, without any special noise insulation.
C = Conditionally acceptable. New construction or development only after a detailed analysis of noise mitigation is made and needed noise insulation features are included in project design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning normally will suffice.
N = Normally unacceptable. New construction or development generally should be discouraged. A detailed analysis of noise reduction requirements must be made and noise insulation features included in the design of a project.
U = Clearly unacceptable. New construction or development generally should not be undertaken.

LAX Noise Abatement Procedures

LAWA has negotiated a series of preferred operating procedures for LAX that are designed to ease noise impacts over certain areas and during noise-sensitive hours. These procedures are generally followed; however, if weather conditions are hazardous or to address other safety considerations, the FAA may instruct pilots to deviate from these noise-abatement-preferred procedures and programs (the FAA has the final determination of where aircraft fly). Several of the preferred noise-reducing operating procedures are discussed below.[38]

Over-Ocean Operation Procedure

From midnight to 6:30 a.m., over-ocean procedures are in place that route both arrivals and departures over the ocean, unless FAA Air Traffic Control determines that weather or airport/air traffic operational conditions make it unsafe for such operations.[39] This procedure provides nearby communities to the east of the airport with some noise relief from arriving aircraft during the potentially noise-sensitive early morning hours.

[38] Los Angeles World Airports, *Efforts to Reduce or Limit Aircraft Noise at LAX*. Available: https://www.lawa.org/en/lawa-environment/noise-management/lawa-noise-management-lax/efforts-to-reduce-or-limit-aircraft-noise-at-lax, accessed August 11, 2020.

[39] These procedures do not abrogate the authority and responsibility of the pilot in command with respect to the safe operation of the aircraft.

Preferential Runway Use Procedure

During the daytime and evening hours between 7:00 a.m. and 10:00 p.m., LAWA prefers that the outer runways (closer to neighboring communities) are reserved for arrivals, and that the inner runways (closer to the terminals) are used for departures. LAWA has established this preference because departures are generally louder than arrivals. During the potentially noise-sensitive hours between 10:00 p.m. and 7:00 a.m., FAA Air Traffic Control maximizes the use of the inner runways and taxiways for all operations to lessen community noise impacts.

Early Turn Notification Program

To minimize noise in residential communities along the north and south airport boundaries, pilots of all aircraft departing toward the west (over the ocean) must fly straight until past the shoreline and at a certain elevation before beginning any turns, unless specifically instructed otherwise by FAA Air Traffic Control.

Fly Quieter Program

The LAX Fly Quieter Program (FQP) is a new education and recognition program designed to encourage commercial airlines to take voluntary measures to reduce noise, including using quieter aircraft and complying with noise abatement procedures. Under the program, LAWA will evaluate airlines' current fleets and operating procedures as they relate to noise. LAWA has begun monitoring noise levels of the flights themselves, and will evaluate other voluntary procedures that could reduce aircraft noise impacts in adjacent communities. Once fully implemented, LAWA will engage with each airline regarding its noise reduction and/or stakeholder engagement efforts in order to finalize annual scores and publicly recognize the airlines that make the most substantial efforts to address aircraft noise.

LAX Sound Insulation Programs

Sound Insulation Programs associated with LAX were developed to ensure that residential communities adversely impacted by aircraft noise are made compatible with California Noise Standards and to provide additional sound insulation for noise-impacted schools. The goals of sound insulation programs, in general, are defined in FAA Order 5100.38D, *Airport Improvement Program Handbook.*[40] The programs include a Residential Sound Insulation Program for residences within the City of Los Angeles, Residential Sound Insulation Programs for surrounding jurisdictions, and a School Sound Insulation Program for the Lennox and Inglewood School Districts.

Within the City of Los Angeles, LAWA, working closely with local City Council offices, implemented a voluntary Residential Soundproofing Program for aircraft noise-impacted communities within the City's jurisdiction. The program offered sound insulation to residential building owners in areas of the City of Los Angeles that were in the 65 dB CNEL noise contour shown on the fourth quarter 1992 (4Q92) noise contour map. The Soundproofing Program, which began in 1997, implemented sound insulation projects within the highest noise-impacted areas of Westchester, Playa del Rey, and South Los Angeles. LAWA closed out the program in 2014. At program completion, LAWA had soundproofed over 7,300 residential dwelling units in the City of Los Angeles near LAX.

[40] U.S. Department of Transportation, Federal Aviation Administration, *Order 5100.38D, Airport Improvement Program Handbook*, effective September 30, 2014, at Appx. R. Available: https://www.lawa.org/-/media/lawa-web/tenants411/file/airport_improvement_program_handbook.ashx.

Separately, LAWA established the Sound Insulation Grant Program to administer and monitor funding (airport and federal funds) for Residential Sound Insulation Programs implemented by the City of Inglewood; County of Los Angeles (in the unincorporated areas of Lennox, Del Aire, and Athens); and City of El Segundo, which terminated its program in July 2018.) In addition, the Program administers funding for the sound insulation of schools in the Lennox School District and the Inglewood Unified School District.

4.7.1.3.2 Environmental Setting

The existing baseline conditions reflect aircraft noise levels associated with the LAX airfield and operational parameters that existed in 2018. As described in the introduction to Chapter 4, 2018 was used for those analyses that required a full calendar year of aircraft operations data, including aircraft noise. A description of the data and assumptions used to develop the aircraft noise exposure contours, such as the average daily number of aircraft operations, the aircraft fleet mix and its distribution throughout the day, the utilization of the runways, and information about flight paths, is provided in **Appendix F.1**, *Aircraft Noise Analysis Technical Report*.

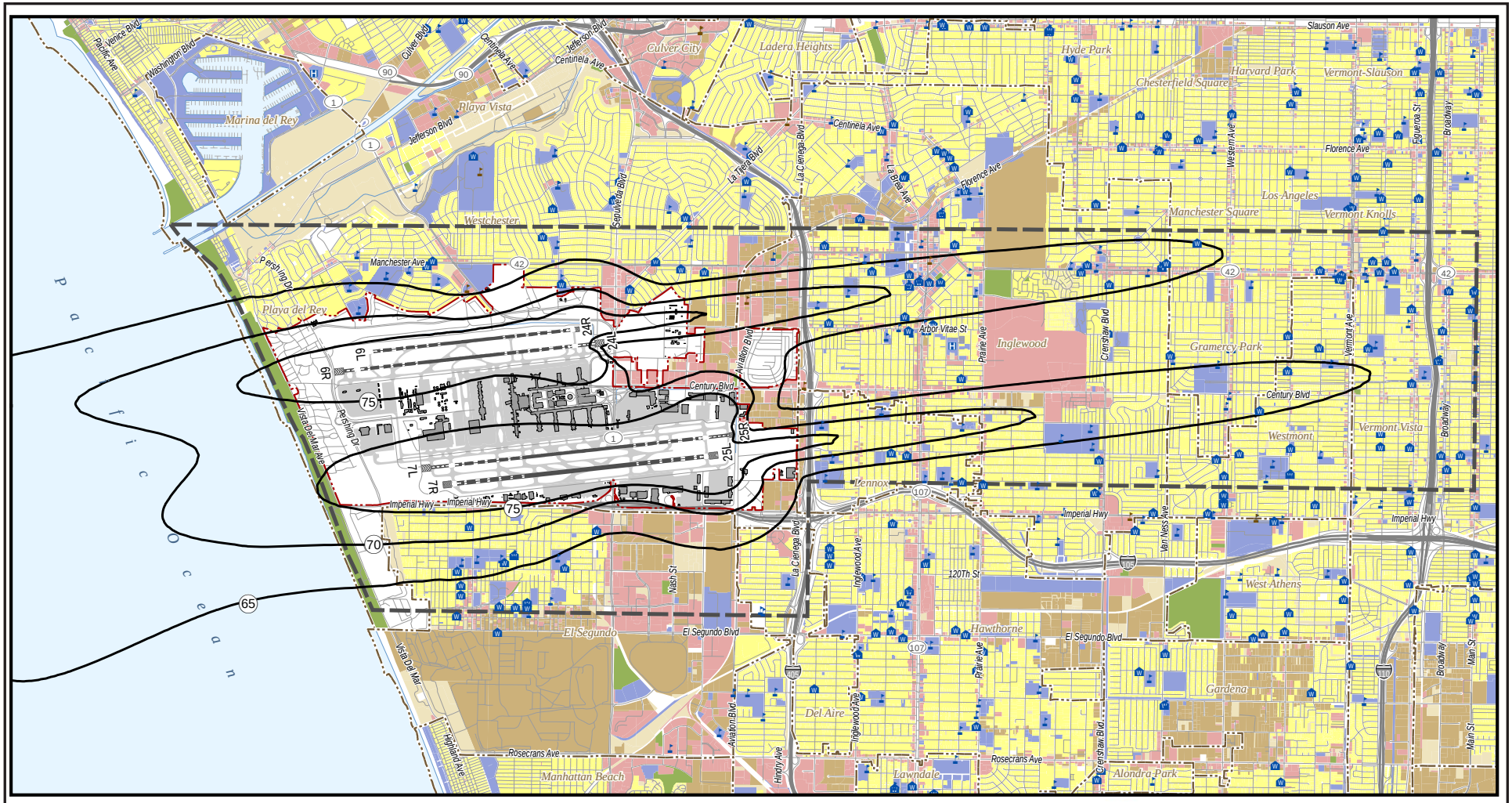
The boundaries of the study area for aircraft noise impacts are generally defined by the geographic extent of the 65 CNEL aircraft noise contour for future (2028) conditions. Land uses within the existing (2018) 65 CNEL contour include, but are not limited to, residential, commercial/office, park, educational, industrial, school, and church uses, and vacant land/open space (including former residential land acquired under FAA's grant program), with the predominant land use type being residential.

4.7.1.3.2.1 Existing Baseline Aircraft Noise Exposure

This section presents the CNEL noise exposure contours representing the existing baseline conditions.

LAX operates in west flow approximately 95 percent of the time. During west flow, aircraft arrive from the east (traveling to the west) and depart from the airport in a westerly direction. Therefore, in west flow, takeoffs are routed to the west of the airport, with the climb out portion of the takeoff occurring mostly over the ocean. For most aircraft, the climb phase, which utilizes higher engine thrust, is the noisiest phase of flight. Furthermore, during the late night and early morning hours (midnight to 6:30 a.m.) over-ocean procedures are in place that route both arrivals and departures over the ocean. These procedures have been in place since the early 1970s. Due to these operating procedures, aircraft noise levels are much higher west of the airport over the ocean than over the populated areas to the east.

Utilizing the FAA's AEDT Version 3b, CNEL contours were developed for noise levels associated with existing baseline aircraft operations at LAX**. Figure 4.7.1-6** delineates the 65, 70, and 75 CNEL aircraft noise contours for existing baseline conditions and also shows the underlying land use types. As shown, the 65 CNEL noise contour primarily extends east and west of the north and south airfields, along the aircraft approach and departure paths to and from Runways 6L-24R, 6R-24L, 7L-25R, and 7R-25L. To the east of the runways, the 65 CNEL contour extends for approximately 5 miles from the end of the runways. To the west of the runways, the 65 CNEL contour also extends for several miles, with most of the westerly contours over the ocean. The 65 CNEL noise contour also extends to the north and south of LAX for up to approximately 0.6 and 0.8 mile from the runways, respectively.



0 4,000 8,000 Feet

Scale

Source: HMMH, June 2020

Prepared by: CDM Smith,October 2020

Legend

- 2018 Baseline CNEL Contours (65-75 dB)
- Land Use Study Area
- LAX Property Boundary
- Municipal Boundary
- Runway
- Airport Buildings
- Airport Pavement
- Residential Use
- Public Use
- Recreational / Open Space
- Commercial Use
- Manufacturing and Production
- Vacant / Undefined
- School
- College
- Hospital
- Place of Worship

LAX Airfield and Terminal Modernization Project	Aircraft Noise Contours (65-75 CNEL): Baseline (2018) Conditions	Figure **4.7.1-6**

Population, Housing, and Acreage

Table 4.7.1-5 provides the estimated population, housing units, and acreage within the 65-70 CNEL, 70-75 CNEL, and 75+ CNEL contours under existing baseline conditions.

Table 4.7.1-5
Estimated Population, Housing Units, and Acreage within the Aircraft Noise Contours under Existing Baseline Conditions

Population				Housing Units				Acreage			
65-70 CNEL	70-75 CNEL	>75 CNEL	Total	65-70 CNEL	70-75 CNEL	>75 CNEL	Total	65-70 CNEL	70-75 CNEL	>75 CNEL	Total
56,632	16,499	780	73,911	20,938	4,819	303	26,060	7,616	3,462	2,259	13,338

Source: HMMH, 2020.

Other Noise-Sensitive Uses

Table 4.7.1-6 shows the number of other noise-sensitive uses, such as houses of worship, schools, libraries, hospitals, and colleges, within the 65-70 CNEL, 70-75 CNEL, and 75+ CNEL contours under existing baseline conditions (see Figure 4.7.1-6).

Table 4.7.1-6
Other Noise-Sensitive Uses within the Aircraft Noise Contours under Existing Baseline Conditions

	65-70 CNEL	70-75 CNEL	75+ CNEL	Total
House of Worship	24	1	0	25
School	24	4	0	28
Library	2	0	0	2
Hospital	0	0	0	0
College	0	1	0	1
Total	**50**	**6**	**0**	**56**

Source: HMMH, 2020.

Schools

Schools can be affected by both an overflight of a single aircraft, which can disrupt speech, and by the general intrusiveness of noise that elevates the ambient noise level within the school, which can disrupt classroom learning. These types of aircraft noise events are considered to pose the potential for significant impacts specific to schools, as further described below in Section 4.7.1.4. To establish existing baseline noise exposure conditions specific to those types of aircraft noise events and to define the geographic scope of the analysis, schools that were exposed to the following conditions were identified in this analysis:

- Interior single event maximum aircraft noise levels (L_{max}) of 55 dBA and 65 dBA lasting more than three seconds
- Peak hour average noise levels of 35 dBA $L_{eq}(h)$ or greater

As noted in Section 4.7.1.2.3, in order to attain a level of below 55 dBA and 65 dBA inside the classroom, exterior noise levels would need to be less than 84 and 94 dBA, respectively**. Table 4.7.1-7** identifies the number of schools within the LAX environs that are exposed to the exterior noise under existing baseline conditions. There were no schools exposed to interior L_{max} noise levels above 65 dBA. The names and locations of the schools associated with interior single L_{max} noise levels of 55 dBA and peak hour average noise levels at or higher than 35 dBA $L_{eq}(h)$ are provided in **Table 4.7.1-8** and **Table 4.7.1-9**, respectively. Table 4.7.1-8 presents the average daily minutes per school day that exceed an exterior noise level of 84 decibels L_{max} under baseline conditions, which equates to an interior noise level of 55 dBA L_{max} at the indicated school; the number of events to which each school is exposed on an average annual school day that exceed 84 dBA; and the average duration of each event. Table 4.7.1-9 identifies the hourly equivalent noise level at schools with exceedances of the ANSI 35 $L_{eq}(h)$ standard during the average school day.

Table 4.7.1-7
School Exposure to Aircraft Noise under Existing Baseline Conditions

Impact Category	Number
Exposure to >= 55 dBA (L_{max})	
Number of Schools	7
Average Number of Events per School	13
Average Seconds per Event	4
Exposure to >= 65 dBA (L_{max})	
Number of Schools	0
Exposure to >= 35 dBA ($L_{eq[h]}$)	
Number of Schools	7

Source: HMMH, 2020.

Table 4.7.1-8
Schools Exposed to Noise Above Interior dBA Speech Interference Levels[1] During the Average School Day[2] under Existing Baseline Conditions

School	Existing Baseline Conditions		
	TA-84 (minutes)[3]	# Events above Threshold[4]	Avg. Duration (seconds)[5]
Spartan College of Aeronautics and Technology - Inglewood Campus	2.0	36.0	3.3
Dolores Huerta Elementary School	0.9	14.7	3.7
Felton Elementary School	0.7	11.3	3.7
ICEF Inglewood Middle School	0.1	1.5	3.9
Inglewood Continuation High School	0.2	3.1	3.9
Missionette Christian Academy	0.1	1.5	4.0
Oak Street Elementary School	1.0	23.3	2.6

Source: HMMH, 2020.

Notes:
1 Interior dBA speech interference level is 55 dBA L_{max}.
2 Average school day is assumed to be 8:00 a.m. to 4:00 p.m.
3 Total number of minutes (events multiplied by average durations) per school day that exceed an exterior noise level of 84 decibels L_{max}, which equates to an interior noise level of 55 dBA L_{max} at indicated school.
4 Number of events to which the school is exposed on an average annual school day that exceed 84 dBA.
5 Average duration of each event in seconds during the average annual school day that exceeds 84 dBA L_{max}.

Table 4.7.1-9
Schools Exposed to Exceedances of ANSI Steady-State Noise Level[1] During the Average School Day[2] under Existing Baseline Conditions

School	8-Hour L_{eq} Values[3]
Spartan College of Aeronautics and Technology - Inglewood Campus	38.1
Dolores Huerta Elementary School	36.7
Felton Elementary School	36.0
ICEF Inglewood Middle School	35.1
Inglewood Continuation High School	36.6
Missionette Christian Academy	35.0
Oak Street Elementary School	37.1

Source: HMMH, 2020.

Notes:

1 The ANSI interior hourly average noise standard was designed to keep interfering steady-state noise at or below an hourly L_{eq} of 35 dBA in the classroom during typical school hours.

2 Average school day is assumed to be 8:00 a.m. to 4:00 p.m.

3 Noise levels were computed by converting 24-hour exterior L_{eq} data to 8-hour exterior L_{eq} data by adding 4.8 L_{eq} to the computed 24-hour level, and then subtracting 28.8 decibels from exterior to interior attenuation produced by average construction techniques at area schools (as measured by LAWA), to result in interior hourly L_{eq} values.

4.7.1.4 Thresholds of Significance

A significant impact would occur if the proposed Project would:

Threshold 4.7.1-1 Generate aircraft noise that would increase noise levels at exterior use areas of residences, schools, hospitals, or places of worship to 65 CNEL or above, as compared to baseline conditions.

Threshold 4.7.1-2 Cause ambient noise levels to increase by 1.5 dBA or more, as compared to baseline conditions, in noise-sensitive areas whose ambient noise levels attributable to airport operations exceed 65 CNEL or greater.[41]

Threshold 4.7.1-3 Cause a substantial increase in the amount of time that aircraft-induced noise would affect classroom learning, as compared to baseline conditions.

The above thresholds of significance are based on the L.A. CEQA Thresholds Guide[42] and Appendix G of the State CEQA Guidelines. The L.A. CEQA Thresholds Guide identifies categories of noise-sensitive uses in the City, which are reflected in Threshold 4.7.1-1, and defines a significant impact as a 1.5 dBA increase within the 65 CNEL contour due to exposure to airport noise, as reflected in Threshold 4.7.1-2.

The thresholds also reflect Appendix G of the State CEQA Guidelines, which requires lead agencies to consider if their project would generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise

41 The FAA's 1050.1F Desk Reference, Version 2, requires evaluation of an increase in noise by 1.5 dB or more for areas where existing noise levels are at or greater than 65.0 dB DNL (CNEL is used in California). Based on the FICON 1992 document entitled *Federal Interagency Review of Selected Airport Noise Analysis Issues*, the FAA considers a 1.5 dB increase in the 65 DNL or greater contour to be discernable.

42 City of Los Angeles, *L.A. CEQA Thresholds Guide, Your Resource for Preparing CEQA Analyses in Los Angeles*, 2006. Available: https://planning.lacity.org/odocument/cc8fb2f5-dc6c-47f1-bfc3-864b84621abb/CEQAThresholdsGuide.pdf.

ordinance, or applicable standards of other agencies; or expose people residing or working within an airport land use plan area to excessive noise levels.

For purposes of this analysis, the Appendix G consideration related to the exposure of people to excessive noise levels was extended to classroom learning. As a means of evaluating noise levels at schools, the FICON and ANSI standards described in Section 4.7.1.2 were employed. Specifically, the amount of time during which noise levels would exceed a specified range (i.e., TA levels) due to aircraft operations at LAX in 2028 was determined, and exceedances of acceptable interior hourly average noise levels during school hours were identified. These noise levels and durations were compared to existing baseline conditions to determine if there would be a substantial change from baseline conditions that would constitute a significant impact. As indicated in Section 4.7.1.2, speech interference in the classroom occurs when interior noise levels exceed 55 dBA and 65 dBA in large and small group settings, respectively. These noise levels equate to exterior noise levels of 84 dBA and 94 dBA, respectively. Therefore, for purposes of this EIR, 84 dBA is considered to be the sound level above which learning within a classroom setting could be adversely affected. Additionally, as described in Section 4.7.1.2, in order to address impacts from steady-state noise in the classroom, increases in classroom 8-hour $L_{eq}(h)$ are also considered to adversely affect classroom learning.

When considering the impacts of the proposed Project in 2028, Project impacts were compared to 2018 baseline conditions. However, the significance thresholds listed above were also used in evaluating operational aircraft noise impacts related to the temporary closure of each north runway during construction of the north airfield improvements. For the narrow purpose of analyzing noise impacts during these temporary runway closures, the baseline conditions used were those that would occur during each affected year, but without the closure (i.e., aircraft noise levels occurring in 2023 with the temporary closure of Runway 6L-24R were compared to noise levels projected to occur in 2023 without the runway closure; the same approach was used for 2024 relative to the temporary closure of Runway 6R-24L). By comparing impacts to 2023 and 2024 conditions, instead of 2018, the analysis accurately identifies temporary short-term noise impacts that would occur as a direct consequence of temporary runway closures during project construction. It would be misleading and of no informational value to use the 2018 baseline conditions for this analysis, as the difference in noise levels would be partially attributable to five to six years of growth in aircraft operations projected to occur at LAX rather than solely to the temporary runway closures.

4.7.1.5 Project Impacts

As described above in Section 4.7.1.2, to evaluate aircraft noise impacts, aircraft noise levels associated with the proposed Project in 2028 were compared to the aircraft noise levels associated with existing baseline conditions. As also described in that section, the change in future (2028) aircraft noise conditions compared to existing baseline conditions is attributable to growth in passenger activity and aircraft operations that is anticipated to occur at LAX by 2028 with or without the proposed Project (see **Appendix F.1**).[43] Specifically, passenger activity levels at LAX between 2018 and 2028 are forecast to increase from approximately 86.1 million annual passengers (MAP) to approximately 111 MAP, which would be accompanied by an increase in the number of daily flights at LAX, as well as an anticipated change in the fleet mix (i.e., size and types of aircraft), during that time. As shown in **Table 4.7.1-10**, the number of average annual daily aircraft operations is forecast to increase from 1,958 in 2018 to approximately 2,191 in 2028. Although the proposed Project would reconfigure some of the taxiways and

[43] **Appendix F.1** includes annual aircraft operations (see Table F.1-4), which applies to both the proposed Project and the No Project Alternative. See also **Appendix B.1**.

runway exits in the North Airfield, these improvements would not alter runway configurations or orientations, and would not result in changes to departure or approach noise.

Table 4.7.1-10
Average Annual Daily Aircraft Operations at LAX

2018	2023	2028
1,958	2,060	2,191

Source: Ricondo & Associates, Inc., 2020.

The following tables and figures describe the estimated changes in aircraft noise exposure levels associated with the proposed Project in 2028. These tables and figures serve as the basis for the impacts analysis that follows.

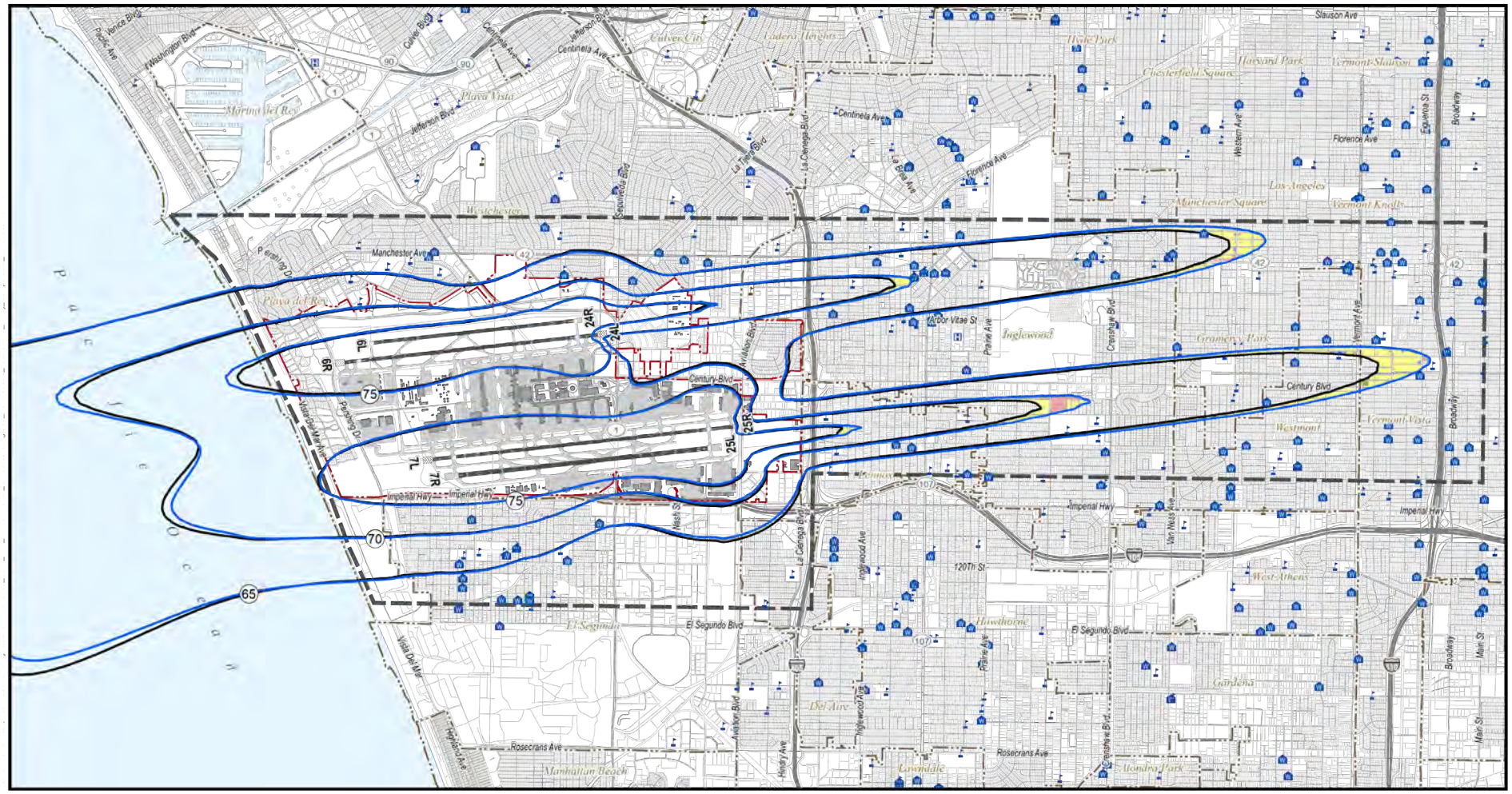
Figure 4.7.1-7 illustrates the aircraft noise contours (65, 70, and 75 CNEL) projected to occur in 2028 (the buildout year of the proposed Project) and identifies the land uses that would be newly exposed as compared to 2018 baseline conditions. **Figure 4.7.1-8** identifies the area that is projected to experience a 1.5 dBA increase in noise exposure levels within the 65 CNEL contour relative to 2018 baseline conditions.

Table 4.7.1-11 identifies the population, number of housing units, and acreage within the various CNEL -ranges that would be affected by the proposed Project in 2028, and provides a comparison to existing baseline conditions. **Table 4.7.1-12** provides similar information for other noise-sensitive uses, such as houses of worship, schools, libraries, hospitals, and colleges, with a comparison between 2028 and existing baseline conditions.

Two additional figures, **Figure 4.7.1-9** and **Figure 4.7.1-10**, are included for informational purposes. Figure 4.7.1-9 compares the 2028 65-75 CNEL noise contours with implementation of the proposed Project with the contours that would occur in the Future Without Project scenario in 2028 (2028 Without Project), as well as to 2018 baseline conditions. Figure 4.7.1-10 depicts the area that would experience a 1.5 dBA increase in noise exposure under the 2028 Without Project scenario as compared to baseline conditions. Table 4.7.1-11 and Table 4.7.1-12 provide the corresponding data associated with the 2028 Without Project scenario.

4.7.1.5.1 Impact 4.7.1-1

Summary Conclusion for Impact 4.7.1-1: Implementation of the proposed Project would generate operational aircraft noise that would increase noise levels at exterior use areas of residences, schools, hospitals, and places of worship to 65 CNEL or above during operations, as compared to existing baseline conditions; this would be a significant operational impact. In addition, the proposed Project would generate temporary construction-related increases in aircraft noise levels in 2023 and 2024 that would increase noise levels to 65 CNEL or above, as compared to conditions without the proposed Project; this would be a significant short-term, construction-related impact. Even with mitigation, the operational impact would remain *significant and unavoidable*. Similarly, the construction-related impact would remain *significant and unavoidable*, although this impact would only be short-term (i.e., approximately 4.5 months).



Legend

- 2018 Baseline CNEL Contours (65-75 dB)
- 2028 Forecast "Proposed Project" CNEL Contours (65-75 dB)
- Land Use Study Area
- LAX Property Boundary
- Municipal Boundary
- Runway
- Airport Buildings
- Airport Pavement
- Residential Use
- Public Use
- Recreational / Open Space
- Commercial Use
- Manufacturing and Production
- Vacant / Undefined
- School
- College
- Hospital
- Place of Worship

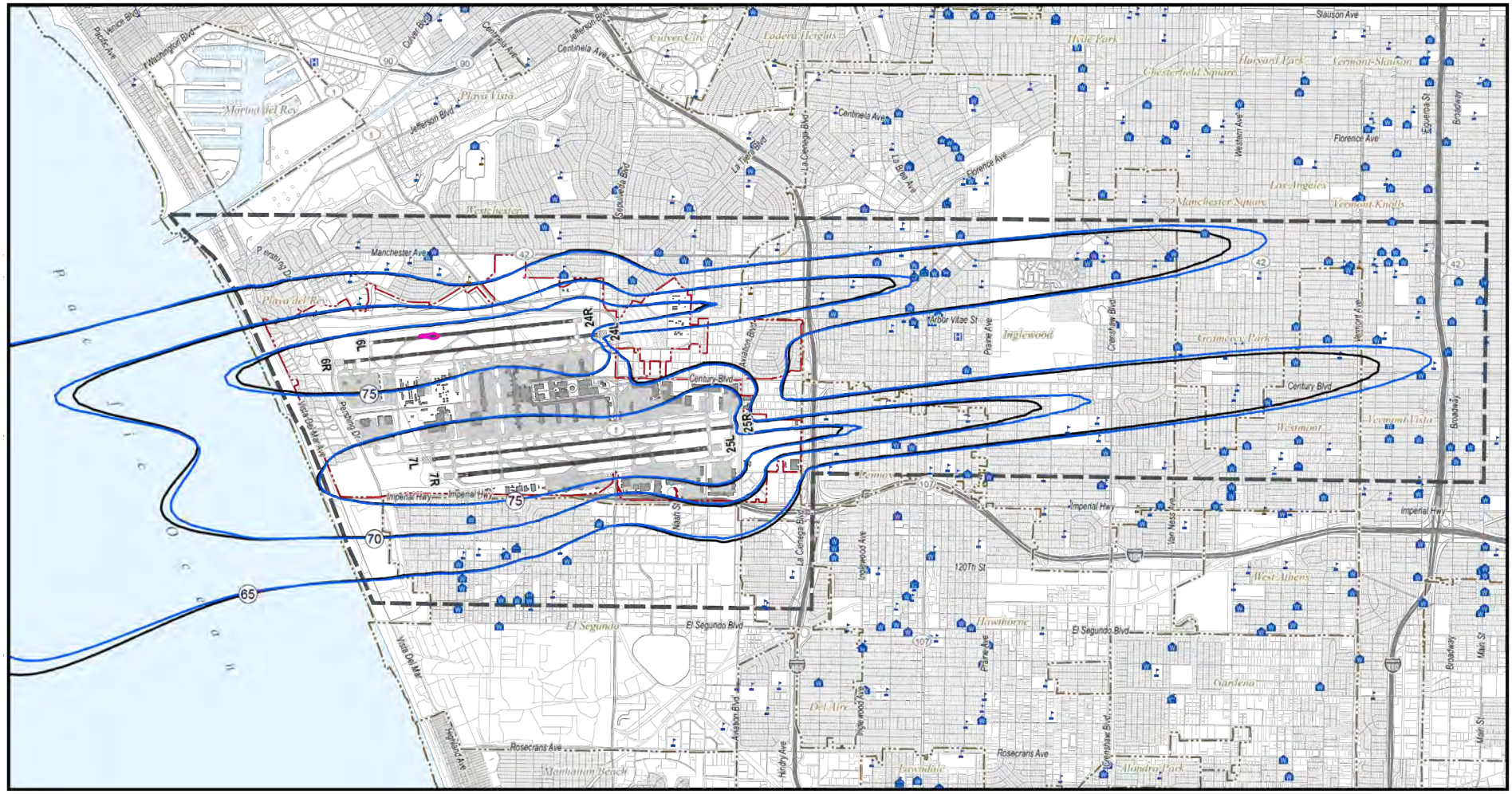
0 4,000 8,000 Feet
Scale

Source: HMMH, June 2020
Prepared by: CDM Smith, October 2020

LAX Airfield and Terminal Modernization Project

Aircraft Noise Contours (65-75 CNEL): 2028 Proposed Project Compared to Baseline (2018) Conditions

Figure **4.7.1-7**



Legend

- 2018 Baseline CNEL Contours (65-75 dB)
- 2028 Forecast "Proposed Project" CNEL Contours (65-75 dB)
- 1.5 dB or Greater Increase Contour
- Land Use Study Area
- LAX Property Boundary
- Municipal Boundary
- Runway
- Airport Buildings
- Airport Pavement
- School
- College
- Hospital
- Place of Worship

0 4,000 8,000 Feet
Scale

Source: HMMH, June 2020
Prepared by: CDM Smith, October 2020

LAX Airfield and Terminal Modernization Project

1.5 dBA Increase within the 65 CNEL Contour: Proposed Project (2028) Compared to Baseline (2018) Conditions

Figure **4.7.1-8**

Table 4.7.1-11
Estimated Population, Housing Units, and Acreage within the Aircraft Noise Contours under Existing Baseline and Future Conditions

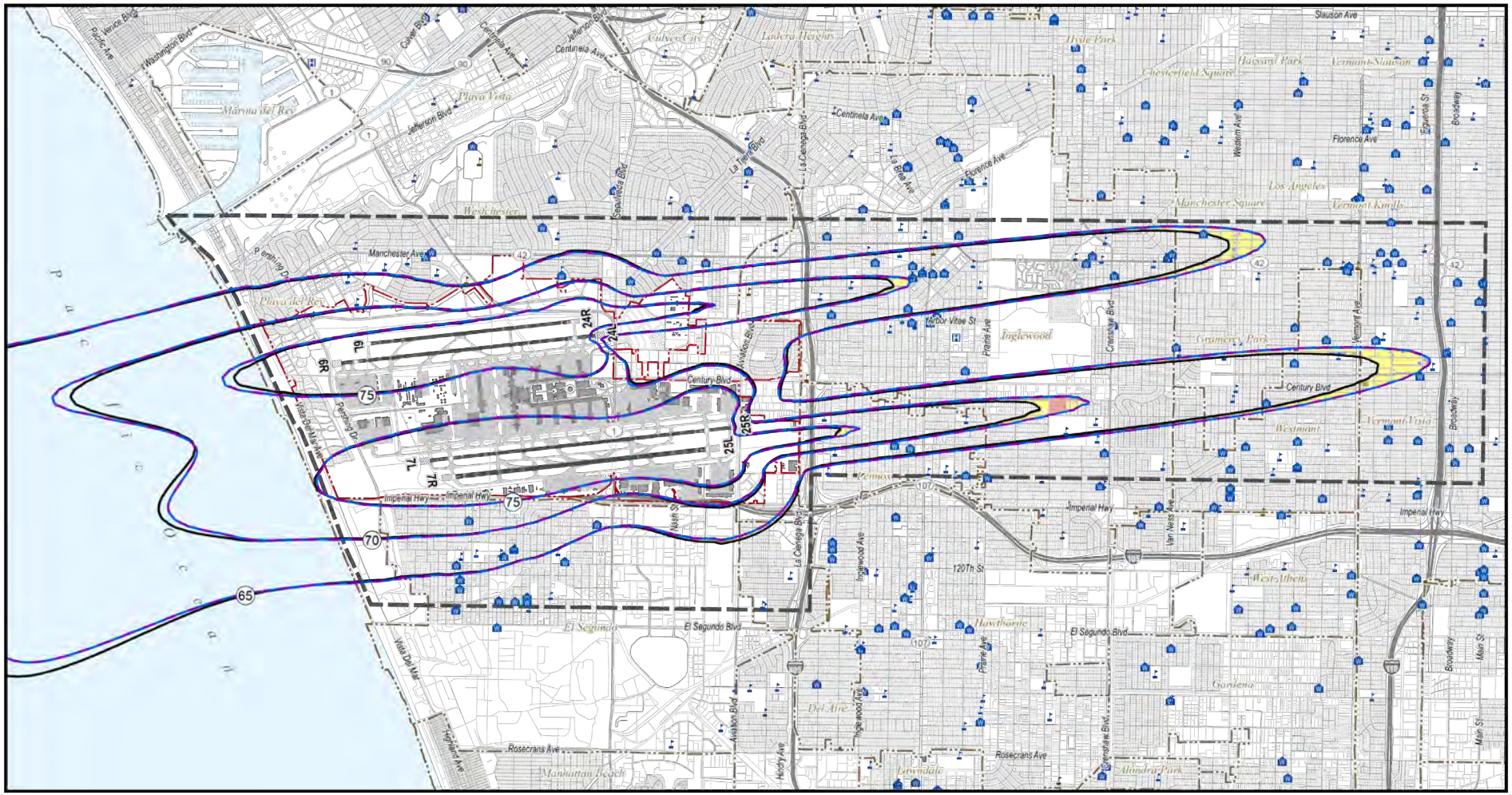
	Population				Housing Units				Acreage			
	65-70 CNEL	70-75 CNEL	>75 CNEL	Total	65-70 CNEL	70-75 CNEL	>75 CNEL	Total	65-70 CNEL	70-75 CNEL	>75 CNEL	Total
Existing Baseline Conditions (2018)	56,632	16,499	780	73,911	20,938	4,819	303	26,060	7,616	3,462	2,259	13,338
2028 Conditions												
2028 With Project Conditions												
2028 With Project	61,311	19,596	1,183	82,090	22,651	5,660	413	28,724	7,821	3,520	2,317	13,658
Difference between 2028 With Project and Existing Baseline Conditions	**4,679**	**3,097**	**403**	**8,179**	**1,713**	**841**	**110**	**2,664**	**205**	**58**	**58**	**320**
2028 Without Project Conditions												
2028 Without Project	61,311	19,596	1,183	82,090	22,651	5,660	413	28,724	7,820	3,520	2,317	13,658
Difference Between 2028 With Project and 2028 Without Project	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Source: HMMH, 2020.

Table 4.7.1-12
Other Noise-Sensitive Uses within the Aircraft Noise Contours under Existing Baseline (2018) and Future (2028) Conditions

	House of Worship				School				Library				Hospital				College				Total of All Uses			
	65-70 CNEL	70-75 CNEL	>75 CNEL	Total	65-70 CNEL	70-75 CNEL	>75 CNEL	Total	65-70 CNEL	70-75 CNEL	>75 CNEL	Total	65-70 CNEL	70-75 CNEL	>75 CNEL	Total	65-70 CNEL	70-75 CNEL	>75 CNEL	Total	65-70 CNEL	70-75 CNEL	>75 CNEL	Total
Existing Baseline Conditions	24	1	0	25	24	4	0	28	2	0	0	2	0	0	0	0	0	1	0	1	50	6	0	56
2028 Conditions																								
2028 With Project Conditions																								
2028 With Project	24	1	0	25	25	4	0	29	3	0	0	3	0	0	0	0	1	1	0	2	53	6	0	59
Difference between 2028 With Project and Existing Baseline Conditions	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**3**	**0**	**0**	**3**
2028 Without Project Conditions																								
2028 Without Project	24	1	0	25	25	4	0	29	3	0	0	3	0	0	0	0	1	1	0	2	53	6	0	59
Difference between 2028 With Project and 2028 Without Project	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Source: HMMH, 2020.



Legend

- 2018 Baseline CNEL Contours (65-75 dB)
- 2028 Forecast "Without Project" CNEL Contours (65-75 dB)
- 2028 Forecast "Proposed Project" CNEL Contours (65-75 dB)
- Land Use Study Area
- LAX Property Boundary
- Municipal Boundary
- Runway
- Airport Buildings
- Airport Pavement
- Residential Use
- Public Use
- Recreational / Open Space
- Commercial Use
- Manufacturing and Production
- Vacant / Undefined
- School
- College
- Hospital
- Place of Worship

0 4,000 8,000 Feet
Scale

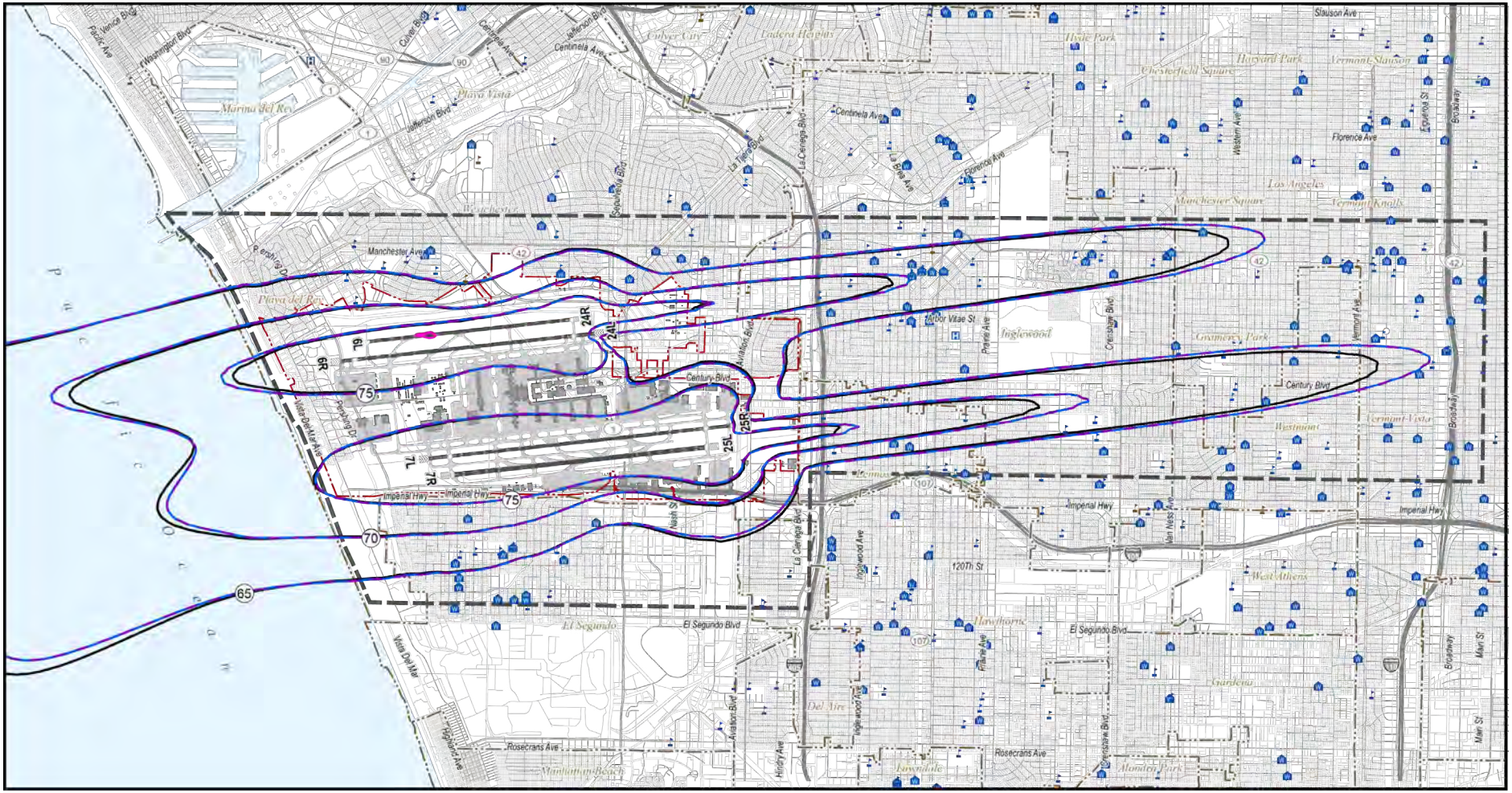
Source: HMMH, June 2020
Prepared by: CDM Smith, October 2020

Note: There is no difference between "Without Project" and "Proposed Project" relative to 2028 Aircraft Noise Contours.

LAX Airfield and Terminal Modernization Project

Aircraft Noise Contours (65-75 CNEL): 2028 Without Project Compared to 2028 Proposed Project and Baseline (2018) Conditions

Figure **4.7.1-9**



Legend

- 2018 Baseline CNEL Contours (65-75 dB)
- 2028 Forecast "Without Project" CNEL Contours (65-75 dB)
- 2028 Forecast "Proposed Project" CNEL Contours (65-75 dB)
- 1.5 dB or Greater Increase Contour
- Land Use Study Area
- LAX Property Boundary
- Municipal Boundary
- Runway
- Airport Buildings
- Airport Pavement
- School
- College
- Hospital
- Place of Worship

Note: There is no difference between "Without Project" and "Proposed Project" relative to 1.5 dB or Greater Increase Contour.

0 4,000 8,000 Feet
Scale

Source: HMMH, June 2020
Prepared by: CDM Smith, October 2020

LAX Airfield and Terminal Modernization Project

1.5 dBA Increase within the 65 CNEL Contour: 2028 Without Project Compared to 2028 Proposed Project and Baseline (2018) Conditions

Figure **4.7.1-10**

4.7.1.5.1.1 Construction

Construction of the improvements in the north airfield (i.e., enabling projects, taxiway extensions, and reconfigured runway exits) would occur from approximately 2021 through 2025, with the runway exits constructed in 2023 and 2024. The construction of the runway exits would require the temporary closures of Runway 6L-24R (north airfield runway farthest from the Central Terminal Area [CTA]) and Runway 6R-24L (north airfield runway closest to the CTA) for approximately 4.5 months each in 2023 and 2024, respectively. During these runway closures, aircraft operations would be temporarily reassigned to the remaining three runways. This, in turn, would result in temporary changes in the aircraft noise contours. The temporary impacts of these short-term runway closures are evaluated below.

Temporary Closure of Runway 6L-24R in 2023

As described in Section 4.7.1.3.1.3, the utilization of runways at LAX is subject to the Preferential Runway Use Procedure whereby LAWA prefers that, during daytime and evening hours (7:00 a.m. to 10:00 p.m.), the outer runways are reserved for arrivals and the inner runways are used for departures. As such, Runway 6L-24R is normally used primarily for arrivals.

Runway 6L-24R would be temporarily closed (for approximately 4.5 months) in 2023 to construct runway exit improvements. With its temporary closure in 2023 for construction of airfield improvements, it is anticipated that arrivals would be reassigned to Runway 6R-24L and Runway 7R-25L. FAA would assign the runway to maintain a balanced airfield, similar to existing arrival use between north and south airfields. There would be situations, based on demand, when FAA would assign arrivals that would normally have been assigned Runway 6L-24R to Runway 7R-25L instead of to Runway 6R-24L. Similarly, although all types of departures (large and heavy for all destinations) can be accommodated on Runway 6R-24L, FAA may assign a departure that would normally have been assigned to Runway 6R-24L to Runway 7L-25R instead of Runway 6R-24L in order to provide a better balance between north and south airfields and to enable arrivals to be accommodated on Runway 6R-24L. The number of departures assigned to Runway 7L-25R would not necessarily be equivalent to what would be expected when Runway 6R-24L is closed. In general, the reassignment of arrivals to Runway 6R-24L and Runway 7R-25L would result in temporary aircraft noise increases in areas east of the airport along the aircraft approach route to these two runways. This is anticipated to include areas where noise-sensitive uses, primarily residential development, are already exposed to 65 CNEL and above (see Figure 4.7.1-6), as well as some areas with noise-sensitive uses that would be newly exposed, on a temporary basis, to 65 CNEL and above.

LAWA provides public notifications of upcoming temporary changes in aircraft operations, including those associated with temporary runway closures. Such notifications are intended to help promote public awareness and understanding of aircraft noise issues that may temporarily affect noise-sensitive uses such as residential areas in the communities around LAX, including noticeable changes in aircraft flight activity and associated noise. The notifications include the anticipated date(s) and time period(s) of upcoming planned runway closures, the affected runway, the reason for the closure, a description of the anticipated change in aircraft operations, and a hyperlink to more detailed information. Such notifications are currently provided on a monthly basis, with updates or changes to existing schedules provided if/as needed. Such notices would similarly promote public awareness of the temporary changes in aircraft flight activity and anticipated noise associated with temporary closure of Runway 6L-24R.

In summary, the temporary closure of Runway 6L-24R and resultant reassignment of arriving aircraft to other runways would result in temporary changes in aircraft noise exposure levels in nearby areas, including temporary increases in areas with noise-sensitive uses already exposed to 65 CNEL and above, as well as some areas with noise-sensitive uses that would be newly exposed, on a temporary basis, to 65 CNEL and above. As such, it is expected that the proposed Project would generate temporary, construction-related increases in operational aircraft noise levels in 2023 from the short-term closure of

Runway 6L-24R that would increase noise levels to 65 CNEL or above, as compared to conditions without the proposed Project. Such increases would be a short-term (i.e., 4.5-month) ***significant impact***. It should be noted that the aforementioned temporary changes in CNEL account for impacts related to sleep disturbance in that the CNEL metric includes penalties for noise events occurring in evening hours (7:00 p.m. to 10:00 p.m.) and nighttime hours (10:00 p.m. to 7:00 a.m.), as explained in Section 4.7.1.1.3.

Temporary Closure of Runway 6R-24L in 2024

As noted above, the utilization of runways at LAX is subject to the Preferential Runway Use Procedure whereby LAWA prefers that, during daytime and evening hours (7:00 a.m. to 10:00 p.m.), the outer runways are reserved for arrivals and the inner runways are used for departures. As such, Runway 6R-24L is normally used primarily for departures.

Once runway exit improvements have been made in the vicinity of Runway 6L-24R, Runway 6R-24L would be temporarily closed (for approximately 4.5 months) in 2024 to construct the remaining runway exit improvements. Although some departures may be temporarily reassigned to Runway 6L-24R (i.e., the outboard runway in the north airfield) during the closure of Runway 6R-24L, Runway 6L-24R is much shorter than Runway 6R-24L (i.e., approximately 8,900 feet compared to approximately 10,900 feet), which would limit the ability of certain aircraft (larger than ADG III traveling 3,000 nautical miles [NM] or more) to depart on Runway 6L-24R. Therefore, during the temporary closure of Runway 6R-24L, it is anticipated that departures of large aircraft that would normally use that runway would instead be reassigned to Runway 7L-25R, which is the primary departure runway in the south airfield. To the extent that the reassignment of some departing flights to Runway 6L-24R does occur, some arrivals that would normally occur on Runway 6L-24R could be assigned to Runway 7R-25L, which is the primary arrivals runway in the south airfield. The reason for this is that an aircraft departure on a runway takes more time to clear than an aircraft arrival on a runway. Therefore, in order to maintain the flow of arrivals at LAX during the temporary closure of Runway 6R-24L, not only would departures likely be reassigned, it is anticipated that some arrivals may also be reassigned.

Given that the vast majority (approximately 94 percent) of aircraft departures at LAX are towards the west, it is anticipated that the temporary changes in aircraft noise levels associated with reassignment of departures from Runway 6R-24L would largely occur in areas near the southwest edge of LAX as a result of the reassignment of most of the departures to Runway 7L-25R. Such temporary increases in aircraft noise exposure levels are anticipated to include areas with noise-sensitive uses, primarily residential development, already exposed to 65 CNEL and above (see Figure 4.7.1-6), as well as some areas with noise-sensitive uses that would be newly exposed, on a temporary basis, to 65 CNEL and above. Although, as noted above, some of the departures that normally use Runway 6R-24L would be reassigned to Runway 6L-24R, the potential for a temporary increase in aircraft noise levels in areas near the northwest edge of LAX would be offset by the fact that there would be no aircraft operations on Runway 6R-24L. In other words, areas to the northwest currently experience aircraft noise exposure levels associated with all of the arrivals that normally occur on Runway 6L-24R, as well as all of the departures that normally occur on Runway 6R-24L. Although some departures would be temporarily reassigned to Runway 6L-24R, which is closer to those areas, most of the departures would be reassigned to the south airfield, which is much farther away, and the total aircraft operations in the north airfield would be reduced.

The expected reassignment of some arrivals from Runway 6L-24R to Runway 7R-25L has the potential to result in temporary aircraft noise increases in areas east of the airport along the aircraft approach route to Runway 7R-25L. This is anticipated to include areas with noise-sensitive uses, primarily residential development, already exposed to 65 CNEL and above (see Figure 4.7.1-6), as well as some areas where noise-sensitive uses would be newly exposed, on a temporary basis, to 65 CNEL. In summary, the temporary closure of Runway 6R-24L and resultant reassignment of aircraft operations to other runways would result in temporary changes in aircraft noise exposure levels in nearby areas, including temporary

increases in areas with noise-sensitive uses, primarily residential development, already exposed to 65 CNEL and above, as well as in some areas with noise-sensitive uses that would be newly exposed, on a temporary basis, to 65 CNEL and above. As such, it is expected that the proposed Project would generate temporary, construction-related increases in operational aircraft noise levels in 2024 from the short-term closure of Runway 6R-24L that would increase noise levels to 65 CNEL or above, as compared to conditions without the proposed Project. Such increases would be a short-term (i.e., 4.5-month) ***significant impact***. It should be noted that, as indicated earlier, the aforementioned temporary changes in CNEL account for impacts related to sleep disturbance in that the CNEL metric includes penalties for noise events occurring in evening hours (7:00 p.m. to 10:00 p.m.) and nighttime hours (10:00 p.m. to 7:00 a.m.), as explained in Section 4.7.1.1.3.

4.7.1.5.1.2 Operations

As shown in Figure 4.7.1-7, the 65 CNEL contours projected to occur in 2028 with implementation of the proposed Project[44] extend beyond the 65 CNEL contours under existing baseline conditions at the east end of the contours; there would be very little change along the sides of the contours or at the west end, which is over open ocean. As indicated in Table 4.7.1-11, an additional 4,679 people and 1,713 housing units are expected to be located within the 65-70 CNEL contour compared to existing baseline conditions. As noted above, changes in CNEL account for impacts related to sleep disturbance in that the CNEL metric includes penalties for noise events occurring in evening hours (7:00 p.m. to 10:00 p.m.) and nighttime hours (10:00 p.m. to 7:00 a.m.). As shown in Table 4.7.1-12, one additional school, library, and college would be located within the 65-70 CNEL contour with implementation of the proposed Project as compared to existing baseline conditions. There would be no increase in the number of houses of worship or hospitals within the 65-70 CNEL contour. These increases in population, housing units, and noise-sensitive uses newly exposed to 65 CNEL or greater would be a ***significant impact***.

As noted in the introductory text to Section 4.7.1.5, aircraft noise impacts in 2028 with implementation of the proposed Project were compared to aircraft noise impacts in the 2028 Without Project scenario for informational purposes. As illustrated in Figure 4.7.1-9, the 65, 70, and 75 CNEL contours for the 2028 Without Project scenario would be the same as for the proposed Project relative to existing baseline conditions. Further, as shown in Tables 4.7.1-11 and 4.7.1-12, the increases in population, housing units, and noise-sensitive uses newly exposed to 65 CNEL or greater would be the same in both scenarios (i.e., the aircraft noise impacts on population, housing units, and noise-sensitive uses attributed to the proposed Project would occur even if the proposed Project were not implemented).

4.7.1.5.1.3 Mitigation Measures

Construction

Mitigation of aircraft noise exposure impacts has been completed or is ongoing through sound attenuation of structures, as accomplished through the City of Los Angeles Residential Soundproofing Program or Residential Sound Insulation Programs of eligible surrounding jurisdictions and school districts, as funded through LAX's Sound Insulation Grant Program. It is likely that some of the noise-sensitive uses that would experience a temporary increase in aircraft noise levels during the short-term (4.5-month) closures of Runways 6R-24L and 6L-24R are already exposed to aircraft noise levels of 65 CNEL or greater and have been mitigated through sound insulation, are in the process of receiving sound insulation, or have declined to receive offered sound insulation. For noise-sensitive uses that would be newly exposed to 65 CNEL during the short-term runway closures and that have not previously received mitigation, it is not practical or feasible to implement sound attenuation

[44] If projected aircraft operations for 2028 do not fully materialize as a result of reduced demand for air travel, impacts in 2028 would be less than described herein.

improvements for a temporary, specifically a 4.5-month, period. Federal regulations (49 U.S.C. § 47107) restrict use of airport revenues to capital or operating cost of the airport or airport system, and the FAA does not permit the use of airport revenue to implement sound insulation for interim noise impacts, or to insulate homes outside of the 65 DNL contour.[45] In addition, standard noise mitigation such as shielding or noise barriers, which are placed between noise receptors and noise sources to attenuate sound waves by physically blocking them, cannot effectively attenuate moving airborne noise sources. As such, there are no feasible mitigation measures for interim aircraft noise impacts that would occur during runway exit construction.

Operations

As noted above, when comparing impacts of the proposed Project to baseline conditions, the proposed Project is anticipated to generate aircraft noise that would result in significant impacts at housing units and at other noise-sensitive uses, including a school, a library, and a college. These impacts would occur as a result of growth in passenger activity and aircraft operations that is anticipated to occur at LAX by 2028[46] with or without the proposed Project. Mitigation proposed to reduce significant impacts related to aircraft noise is provided below.

- **MM-AN (ATMP)-1. Sound Insulation Programs.**

  To mitigate significant impacts to noise-sensitive uses that are newly exposed to 65 dBA CNEL or greater from airport operations in future years of the proposed Project, LAWA will update the Noise Exposure Maps (NEM) for LAX in accordance with Title 14 CFR Part 150, prior to project completion. The NEM is the legal document required by FAA to identify noise-sensitive land uses potentially eligible for noise mitigation funding through the FAA's Airport Improvement Program. LAWA will complete the NEM Report and coordinate with FAA to identify any noise-sensitive land uses eligible for noise mitigation and, in accordance with FAA regulations and guidance, apply for noise mitigation funding for eligible noise-sensitive uses. LAWA will work with the appropriate jurisdiction(s) to determine/establish an appropriate implementation program for any eligible noise mitigation. Property owners' eligibility for noise mitigation will be based upon FAA requirements and the LAX Part 150 NEM in effect at the time of operation or completion of the Project.

4.7.1.5.1.4 Significance of Impact After Mitigation

Construction

As indicated above, there are no feasible mitigation measures available for the temporary aircraft noise impacts associated with the 4.5-month closure of each of the north runways during construction of the proposed airfield improvements. As such, the short-term impact associated with aircraft noise exposure during construction would be ***significant and unavoidable***.

Operations

Expansion of the LAX Sound Insulation Programs, as set forth in Mitigation Measure MM-AN (ATMP)-1, provides the basis for eligible dwellings and non-residential noise-sensitive facilities that are newly exposed to noise levels 65 CNEL or higher to undergo sound attenuation. To the extent that sound insulation of individual eligible structures is not in place by the time the expanded 65 CNEL aircraft noise levels occur, there could be ***significant and unavoidable interim noise impacts*** experienced over an indeterminate period of time. In addition, certain residential uses with outdoor private habitable areas

[45] U.S. Department of Transportation, Federal Aviation Administration, *Memorandum: Program Guidance Letter 12-09 AIP Eligibility and Justification Requirements for Noise Insulation Projects*, August 17, 2012.

[46] If projected aircraft operations for 2028 do not fully materialize as a result of reduced demand for air travel, impacts in 2028 would be less than described herein.

could experience exterior noise levels of 65 CNEL or greater even though interior noise levels may be mitigated through the sound insulation occurring through MM-AN (ATMP)-1. These outdoor noise impacts would also be ***significant and unavoidable***. In addition, standard noise mitigation such as shielding or noise barriers, which are placed between noise receptors and noise sources to attenuate sound waves by physically blocking them, cannot effectively attenuate moving airborne noise sources. As such, these measures are not feasible mitigation measures for operational aircraft noise impacts.

4.7.1.5.2 Impact 4.7.1-2

Summary Conclusion for Impact 4.7.1-2: (1) Operations: Operation of the proposed Project in 2028 would not cause ambient noise levels to increase by 1.5 dBA or more, as compared to existing baseline conditions.[47] This would be a *less than significant* impact for operations. (2) Construction: The proposed Project could cause a temporary construction-related increase in aircraft noise levels of 1.5 dBA or more in 2023 and 2024, as compared to conditions without the proposed Project. This would be a *significant and unavoidable impact* for construction, although the construction-related impact would only be short-term (i.e., approximately 4.5 months in each year).

4.7.1.5.2.1 Construction

As discussed in Section 4.7.1.5.1.1, the short-term closure of Runway 6L-24R and resultant reassignment of arrivals to other runways is anticipated to result in temporary increases in aircraft noise levels in areas east of LAX. The short-term closure of Runway 6R-24L is anticipated to result in temporary increases in aircraft noise levels, including increases near the southwestern edge of LAX, and increases in areas east of the airport, due to temporary aircraft reassignments. The temporary increases in aircraft noise exposure levels associated with short-term closures of Runway 6L-24R and Runway 6R-24L are anticipated to include noise-sensitive areas whose ambient noise levels attributable to airport operations already exceed 65 CNEL or greater. The increases in noise levels associated with the runway closures may cause ambient noise levels in these areas to temporarily increase by 1.5 dBA or more. LAWA public notifications of the temporary runway closure would promote public awareness of the temporary changes in aircraft flight activity and anticipated noise associated with temporary closures of Runway 6L-24R and Runway 6R-24L. The possible temporary 1.5 dBA or more increase in ambient noise levels in noise-sensitive areas within the 65 CNEL contour as a result of each temporary runway closure would be a ***significant impact***.

4.7.1.5.2.2 Operations

Figure 4.7.1-8 identifies a small area where there would be a 1.5 dBA increase in the noise level within the 65 CNEL or greater noise contour in 2028 with implementation of the proposed Project as compared to existing baseline conditions. As shown in the figure, the 1.5 dBA increase contour would be confined to the immediate vicinity of Runway 6L-24R in the north airfield, and would not extend into the 65 CNEL contour or beyond the LAX boundary. There are no noise-sensitive uses in the 2028 1.5 dBA increase contour. Therefore, aircraft noise impacts to noise-sensitive areas related to a 1.5 dBA increase within the 65 CNEL contour as a result of operation of the proposed Project would be ***less than significant***.

As noted in the introductory text to Section 4.7.1.5, aircraft noise impacts in 2028 with implementation of the proposed Project were compared to aircraft noise impacts in the 2028 Without Project scenario for informational purposes. As illustrated in Figure 4.7.1-10, the 1.5 dBA increase contour for the 2028 Without Project scenario would be the same as for the proposed Project relative to baseline (2018) conditions. As shown, the 1.5 dBA increase contour would not extend into the 65 CNEL contour or beyond the LAX boundary, and no noise-sensitive uses would be affected.

[47] Per the significance threshold, impacts related to ambient noise level increases of 1.5 dBA or more are only considered to be significant if they occur in noise-sensitive areas whose ambient noise levels attributable to airport operations exceed 65 CNEL or greater.

4.7.1.5.2.3 Mitigation Measures

Construction

As discussed in Section 4.7.1.5.1.3, it is likely that some of the noise-sensitive uses that may experience a temporary 1.5 dBA increase in ambient noise levels during the short-term (4.5 month) closures of Runways 6L-24R and 6R-24L are already exposed to aircraft noise levels of 65 CNEL or greater and have been mitigated through sound insulation, are in the process of receiving sound insulation, or have declined to receive offered sound insulation. For uses that would experience a 1.5 dBA increase in aircraft noise levels during the temporary runway closures and have not previously received mitigation, it is not practical or feasible to implement sound attenuation improvements for a temporary, specifically a 4.5-month, impact. For the same reasons as discussed above in Section 4.7.1.5.1.3, there are no feasible mitigation measures for interim aircraft noise impacts that would occur during runway exit construction.

Operations

The proposed Project would result in a ***less than significant impact*** from operations related to a 1.5 dBA increase within the 65 CNEL contour; no mitigation is required.

4.7.1.5.2.4 Significance of Impact After Mitigation

Construction

As indicated above, there are no feasible mitigation measures available for the temporary aircraft noise impacts associated with short-term runway closures during construction. As such, the short-term impact associated with exposure of noise-sensitive uses to a 1.5 dBA increase or greater within the 65 CNEL contour would be ***significant and unavoidable***.

Operations

Impacts related to exposure of noise-sensitive uses to a 1.5 dBA increase within the 65 CNEL contour relative to baseline conditions would be ***less than significant*** for operations.

4.7.1.5.3 Impact 4.7.1-3

Summary Conclusion for Impact 4.7.1-3: Implementation of the proposed Project would not affect classroom learning during construction or operations, which is defined as a substantial increase in aircraft-induced noise as compared to existing baseline conditions. This would be a *less than significant impact* for construction and operations.

4.7.1.5.3.1 Construction

As discussed in Section 4.7.1.5.1.1, the temporary runway closures are anticipated to result in temporary increases in aircraft noise in the area at the southwest edge of LAX and in the areas to the east of LAX. The resultant temporary changes in the aircraft noise contours could result in some schools being exposed to increased noise levels.

As can be seen in Figure 4.7.1-6, there are no schools located at the immediate southwest edge of LAX, but there are several schools located farther to the south; there are also several schools to the east of LAX, along the approach path. There is a potential that some of the schools could experience increased noise levels associated with the reassignment of flights during the temporary runway closures. However, given the short duration of such increased noise levels, if any, (i.e., 4.5 months), the temporary runway closures would not cause a substantial increase in the amount of time that increased aircraft-induced noise would affect classroom learning, as compared to conditions without the runway closures. As such, the temporary construction-related impact to classroom learning would be ***less than significant.***

4.7.1.5.3.2 Operations

As illustrated in Figure 4.7.1-7, the 65 CNEL contours projected to occur in 2028 with implementation of the proposed Project extend beyond the 65 CNEL contours under existing baseline conditions at the east end of the contours; there would be very little change along the sides of the contours or at the west end, which is over open ocean. As shown in Table 4.7.1-12, there are 24 schools located within the 65-70 CNEL contour under existing baseline conditions; this would increase to 25 schools with implementation of the proposed Project in 2028.

Table 4.7.1-13 identifies changes in school exposure to aircraft noise with implementation of the proposed Project in 2028 as compared to existing baseline conditions. As shown in the table, under the proposed Project, the same number of schools is projected to be exposed to interior single event noise levels greater than 55 dBA (L_{max}), which is the level at which momentary disruption of speech intelligibility occurs in large group settings (i.e., at a distance of 20 feet). The overall number of individual noise events at schools would remain the same as existing baseline conditions and the average duration per event would decrease by 1 second compared to existing baseline conditions. No schools would be exposed to interior single event noise levels greater than 65 dBA (L_{max}), which is the level at which momentary disruption of speech intelligibility occurs in small group settings (i.e., at a distance of 6 feet), under either existing baseline conditions or with implementation of the proposed Project.

Table 4.7.1-13
School Exposure to Aircraft Noise - Proposed Project Compared to Existing Baseline Conditions

Impact Category	Existing Baseline Conditions	Proposed Project	Newly Exposed
Exposure to >= 55 dBA (L_{max})			
Number of Schools	7	7[1]	0
Average Number of Events per School	13	13	N/A
Average Seconds per Event	4	3	N/A
Exposure to >= 65 dBA (L_{max})			
Number of Schools	0	0	0
Exposure to >= 35 dBA ($L_{eq[h]}$)			
Number of Schools	7	7	0

Source: HMMH, 2020.

Note:
[1] Although AEDT indicates a very minor decrease in exposure (0.1 minute or 6 seconds) at one school, a conservative approach is being taken to identify that school as exposed.

Table 4.7.1-14 identifies the names and locations of the schools that would be exposed to interior single event noise levels above 55 dBA (L_{max}). As shown in the table, although two schools would experience an increase in the number of events that would result in elevated interior noise levels, the average duration of the events at these schools would be lower than existing baseline conditions, and the total amount of time that the schools would be exposed to elevated interior noise levels would be the same as, or lower than, existing baseline conditions.[48] Single events at one school would be of longer duration as compared to existing baseline conditions, but the number of events would be lower; the total amount of time that

[48] The main factor in this result is the aircraft fleet and the changes in fleet mix between 2018 and the 2028. Given that this is a single event noise metric and is measured in terms of duration above a certain threshold, aircraft types and associated fleet mix in the future are quieter; hence, the result would be less duration above the threshold level.

the school would be exposed to elevated interior noise levels would be the same as existing baseline conditions.

Table 4.7.1-14
Schools Exposed to Noise Above Interior dBA Speech Interference Levels[1]
During the Average School Day[2] – Proposed Project Compared to Existing Baseline Conditions

School	TA-84 (minutes)[3]		# Events above Threshold[4]		Avg. Duration (seconds)[5]	
	Baseline (2018)	Proposed Project	Baseline (2018)	Proposed Project	Baseline (2018)	Proposed Project
Spartan College of Aeronautics and Technology - Inglewood Campus	2.0	1.9	36.0	**39.3**	3.3	2.9
Dolores Huerta Elementary School	0.9	0.6	14.7	11.8	3.7	3.0
Felton Elementary School	0.7	0.5	11.3	9.4	3.7	3.2
ICEF Inglewood Middle School	0.1	0.1	1.5	1.0	3.9	**5.9**
Inglewood Continuation High School	0.2	0.1	3.1	2.5	3.9	2.4
Missionette Christian Academy	0.1	0.0	1.5	1.0	4.0	0.0
Oak Street Elementary School	1.0	1.0	23.3	**23.7**	2.6	2.5

Source: HMMH, 2020.

Notes:
Items in **Bold** identify conditions under the proposed Project that would be greater than existing baseline conditions.

1 Interior dBA speech interference level is 55 dBA L_{max}.
2 Average school day is assumed to be 8:00 a.m. to 4:00 p.m.
3 Total number of minutes (events multiplied by average durations) per school day that exceed an exterior noise level of 84 decibels Lmax, which equates to an interior noise level of 55 dBA L_{max} at indicated school.
4 Number of events to which the site is exposed on an average annual school day that exceed 84 dBA.
5 Average duration of each event in seconds during the average annual school day that exceeds 84 dBA L_{max}.

Table 4.7.1-15 identifies schools that would be exposed to steady-state (i.e., 8-hour average) noise levels exceeding 35 L_{eq}(h). As shown in the table, implementation of the proposed Project in 2028 would not result in additional schools being newly exposed to 35 L_{eq}(h) as compared to existing baseline conditions. However, as also shown in the table, the steady-state noise level would increase by a small margin (0.2 to 0.4 dBA L_{eq}) at every affected school.

Table 4.7.1-15
Schools Exposed to Exceedances of ANSI Steady-State Noise Level[1]
During the Average School Day[2] – Proposed Project Compared to Existing Baseline Conditions

School	8-Hour dBA L_{eq} Values[3] (2018)		
	Existing Baseline	Proposed Project	Change
Spartan College of Aeronautics and Technology - Inglewood Campus	38.1	38.4	0.3
Dolores Huerta Elementary School	36.7	37.1	0.4
Felton Elementary School	36.0	36.4	0.4
ICEF Inglewood Middle School	35.1	35.4	0.3
Inglewood Continuation High School	36.6	36.8	0.2
Missionette Christian Academy	35.0	35.3	0.3
Oak Street Elementary School	37.1	37.4	0.3

Source: HMMH, 2020.

Notes:

1 The ANSI interior hourly average noise standard was designed to keep interfering steady-state noise at or below an hourly L_{eq} of 35 dBA in the classroom during typical school hours.

2 Average school day is assumed to be 8:00 a.m. to 4:00 p.m.

3 Noise levels were computed by converting 24-hour exterior L_{eq} data to 8-hour exterior L_{eq} data by adding 4.8 L_{eq} to the computed 24-hour level, and then subtracting 28.8 decibels from exterior to interior attenuation produced by average construction techniques at area schools (as measured by LAWA), to result in interior hourly L_{eq} values.

In summary, although the number of single events that would exceed interior noise levels of 55 dBA (i.e., as measures by TA-84) would increase at two schools, and the average duration of single events would increase at a third school, the total amount of time that any school would be exposed to interior noise levels that exceed the 55 dBA metric would decrease at all seven of the affected schools. Moreover, no new schools would be exposed to steady-state noise levels exceeding 35 dBA L_{eq}(h), and the seven schools that are already exposed to noise levels in excess of this metric would experience small imperceptible increases in average daily noise levels. Therefore, implementation of the proposed Project in 2028 would not cause a substantial increase in the amount of time that aircraft-induced noise would affect classroom learning, as compared to baseline conditions. The impact of the proposed Project on classroom learning would be ***less than significant***.

As noted in the introductory text to Section 4.7.1.5, aircraft noise impacts in 2028 with implementation of the proposed Project were compared to aircraft noise impacts in the 2028 Without Project scenario for informational purposes. With respect to classroom learning, changes in exposure to noise levels that would affect classroom learning would be the same as for the proposed Project relative to existing baseline conditions because the same projected future aircraft operations would occur even if the proposed Project is not implemented. As with the proposed Project, no impacts to classroom learning would occur under the 2028 Without Project scenario.

4.7.1.5.3.3 Mitigation Measures

Because construction and operation of the proposed Project would result in a ***less than significant impact*** relative to classroom learning, no mitigation is required.

4.7.1.5.3.4 Significance of Impact After Mitigation

As indicated above, no mitigation is required to address construction or operational impacts relative to classroom learning. The proposed Project would result in a ***less than significant impact***.

4.7.1.6 Cumulative Impacts

The potential for cumulative aircraft noise impacts is defined primarily by current and reasonably foreseeable future operations at LAX. As a result, the geographic area of the cumulative analysis of aircraft noise is the area that lies beneath the LAX flight path, including the area that is within the LAX 65 dBA CNEL noise contours and beyond.

The aircraft noise analysis presented in Section 4.7.1.5 accounts for present operations at LAX during the baseline period (2018) and reasonably foreseeable future operations at LAX (future with Project conditions) in 2028. As concluded in that analysis, implementation of the proposed Project would result in significant aircraft noise impacts in 2028 compared to existing baseline conditions. These impacts include increases in the population, housing units, and noise-sensitive uses newly exposed to 65 CNEL or greater during construction (as a result of temporary changes in aircraft operations during the closure of two runways) and operations, and an increase of 1.5 dBA in in ambient noise levels in noise-sensitive areas within the 65 CNEL contour during construction (also resulting from the runway closures). Although Mitigation Measure MM-AN (ATMP)-1 would provide mitigation for permanent aircraft noise impacts in the form of sound attenuation of eligible structures, the proposed Project would result in significant and unavoidable impacts during the period following noise exposure and before sound insulation is completed, as well as significant and unavoidable impacts to outdoor private habitable areas. As it is not practical or feasible to implement sound attenuation improvements for the temporary impacts that would occur during construction, these short-term project-level impacts would also be significant and unavoidable.

With respect to cumulative impacts, none of the development projects identified in Table 3-1 of this EIR would have aircraft operations that could contribute to cumulative aircraft noise impacts. Therefore, cumulative impacts from aircraft noise would be ***less than significant***.

4.7.1.7 Summary of Impact Determinations

Table 4.7.1-16 summarizes the impact determinations of the proposed Project related to aircraft noise, as described above in Sections 4.7.1.5 and 4.7.1.6. Impact determinations are based on the significance criteria presented in Section 4.7.1.4, and the information and data sources cited throughout Section 4.7.1.

Table 4.7.1-16
Summary of Impacts and Mitigation Measures Associated with the Proposed Project Related to Aircraft Noise

Environmental Impacts	Impact Determination	Mitigation Measures	Level of Significance After Mitigation
Impact 4.7.1-1 (65 CNEL Contours): Implementation of the proposed Project would generate aircraft noise that would increase noise levels at exterior use areas of noise-sensitive uses to 65 CNEL or above during construction (for a 4.5-month period) and operations, as compared to baseline conditions. This would be a ***significant impact*** for construction and operations.	Construction: Significant (short term – approx. 4.5 months)[1] Operations: Significant	Construction: No feasible mitigation is available. Operations: MM-AN (ATMP)-1. Sound Insulation Programs.	Construction: Significant and unavoidable (short term – approx. 4.5 months)[1] Operations: Significant and unavoidable
Impact 4.7.1-2 (1.5 dBA Increase in 65 CNEL Contours): Implementation of the proposed Project could cause a temporary construction-related increase in aircraft noise levels of 1.5 dBA or more within the 65 CNEL contour compared to baseline conditions. Project implementation would not result in a 1.5 dBA increase within the 65 CNEL contour during operations. This would be a ***significant impact*** for construction and a ***less than significant impact*** for operations.	Construction: Significant (short term – approx. 4.5 months)[1] Operations: Less than Significant	Construction: No feasible mitigation is available. Operations: No mitigation is required	Construction: Significant and unavoidable(short term – approx. 4.5 months)[1] Operations: Less than Significant
Impact 4.7.1-3 (Classroom Learning): Implementation of the proposed Project would not cause a substantial increase in the amount of time that aircraft-induced noise would affect classroom learning, as compared baseline conditions, during construction or operations. This would be a ***less than significant impact*** for construction and operations.	Construction: Less than Significant Operations: Less than Significant	Construction: No mitigation is required Operations: No mitigation is required	Construction: Less than Significant Operations: Less than Significant

Note:

[1] Short-term impacts would result from temporary runway closures during construction.

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4.7.2 Roadway Traffic Noise

4.7.2.1 Introduction

This section addresses noise impacts associated with changes in roadway traffic attributable to the proposed Project. Specifically, this section describes the extent to which ambient exterior noise levels at noise-sensitive uses located along major roadways around LAX may change due to traffic associated with the proposed Project. Roadway traffic noise was examined within the Project area and along streets that may experience increased vehicular traffic as a result of the new Concourse 0, Terminal 9, and reconfiguration of localized traffic circulation from the proposed roadway improvements.

Section 4.7.1.1.1 provides an overview of the basics of sound and the metrics used to measure and characterize sound, and describes typical noise levels associated with various activities operations. That overview of sound basics and sound metrics also applies to roadway traffic. Typical noise levels and noise metrics associated with roadway traffic are described below.

The primary focus of this section in on the evaluation of potential noise impacts associated with future increases in roadway traffic or redistribution of roadway traffic around LAX due to the proposed Project. This section also includes an evaluation of potential impacts associated with the increases in future roadway traffic noise levels described herein combined with the future increases in aircraft noise levels described in Section 4.7.1. The evaluations of future roadway traffic noise and future aircraft noise are based on buildout of the proposed Project in 2028. Certain aspects of the proposed Project may be completed and operational prior to 2028, in which case there would be the potential for some overlap in noise impacts from Project-related operation (i.e., future increases in aircraft noise and/or roadway noise) and ongoing construction at the time. However, it would be speculative at this level of planning to estimate the timing, location, and combined noise levels of such overlapping activities.

4.7.2.1.1 General Characteristics of Roadway Traffic Noise

The characteristics of noise, in general, are described earlier in Section 4.7.1.1.1. The following provides additional information regarding the characteristics most relevant to roadway traffic noise.

As discussed in Section 4.7.1.1, noise can be defined as unwanted sound. Roadway traffic noise (or any noise) can disrupt normal activities when the noise reaches certain levels, or when noises are distinctly louder than the typical ambient noise environment. Vehicle traffic sounds are generally considered to be unwanted noise to most people.

Sound from roadway traffic is primarily generated from tire-pavement interaction, vehicle exhaust, and engines. Additionally, vehicle horns and wind shear play a small role in noise from roadway traffic. Roadway traffic noise is never constant. Rather, roadway noise levels change based on the number, speed, and type of the vehicles producing the noise, as well as the driving habits of the vehicle operators. Generally, the loudness of roadway traffic noise increases with heavier traffic volumes, higher speeds, or greater numbers of trucks. The loudness of roadway traffic noise can also be increased by defective mufflers or other faulty equipment on vehicles. Any condition (such as a steep incline) that causes heavy laboring of motor vehicle engines will also increase roadway traffic noise levels. Other, more complicated factors also affect the loudness of roadway traffic noise. For example, as a person moves away from a highway, roadway traffic noise levels are reduced by distance, terrain, and vegetation, as well as by natural and man-made obstacles.

As noted above, the typical sound level on a busy street is 80 dBA and from a quiet automobile at a low speed is 50 dBA. If traffic conditions on a road are good (Level of Service [LOS] A or B), sound levels increase at a rate of 3 dBA per doubling of traffic volume. However, when traffic conditions are already at

LOS C, D, E, or F, increased traffic volumes (including construction traffic) may result in decreasing speeds, and traffic noise will get progressively quieter based on reduced engine operation levels, reduced drive-train and tire rotations, and reduced wind shear. On roads with good traffic conditions, roadway traffic volumes in general, including construction-related traffic, would have to increase by two-fold to reach a 3 dBA increase or by more than three-fold to reach a 5 dBA increase, which are the thresholds of significance used in this analysis (see Section 4.7.2.4). Traffic would have to increase even more on roads with poor operating conditions (LOS C or worse) to reach the 3 dBA to 5 dBA increase. If a road has free-flowing uninterrupted traffic conditions, sound levels increase at a rate of 3 dBA per doubling of traffic volume. However, if a road has saturated or constrained traffic conditions, sound levels will get progressively quieter from an increase in traffic volumes based on decreasing speeds, reduced engine operation levels, reduced drive-train and tire rotations, and reduced wind shear.

4.7.2.2 Methodology

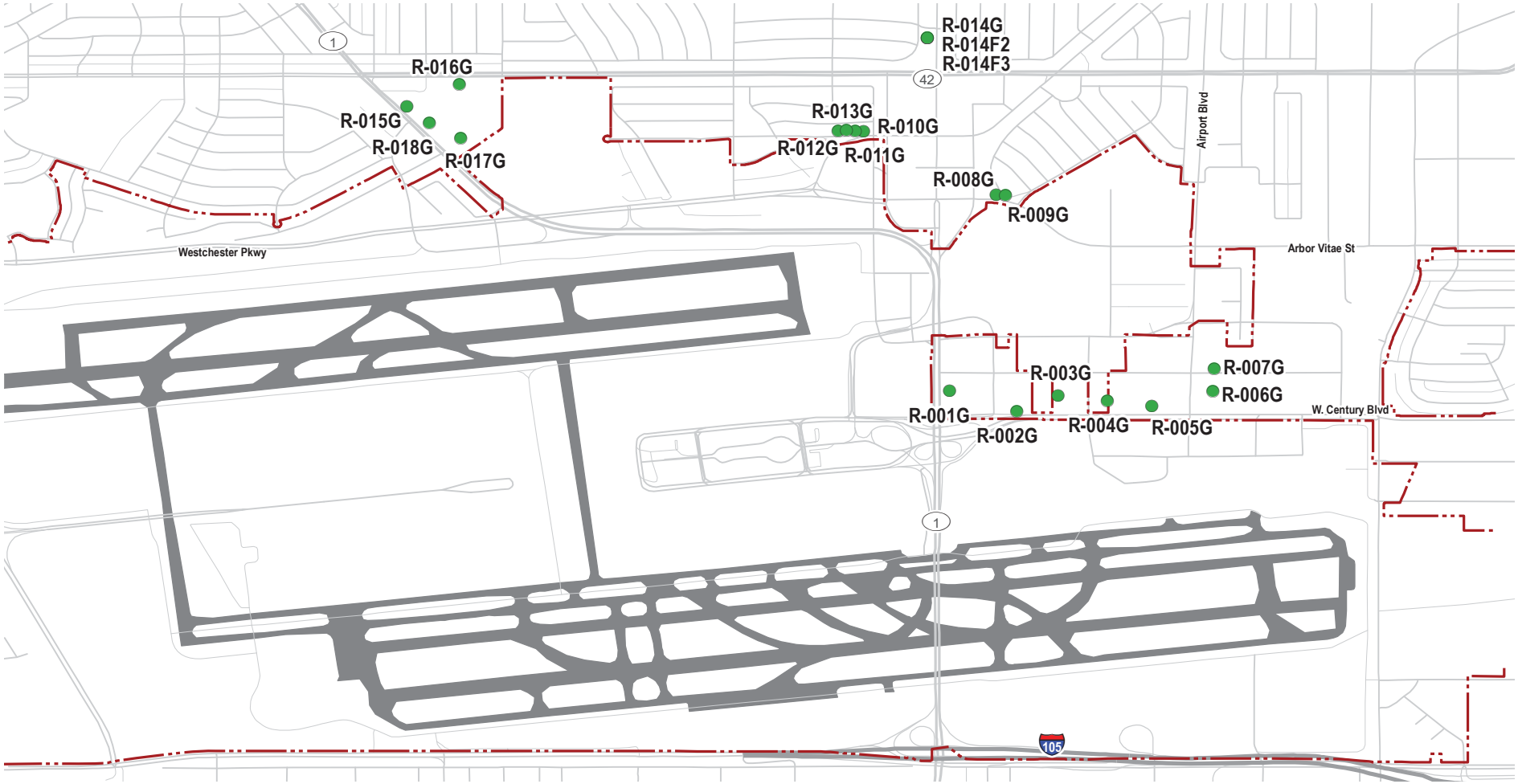
4.7.2.2.1 Overview

This section describes the methodology used to evaluate the potential impacts from roadway traffic noise resulting from operation of the proposed Project. **Appendix F.2** describes this methodology in detail. Project impacts were determined through the following steps:

- Major roadways near the airport that would be used for passenger and worker commute routes were identified by qualitatively assessing the viability of routes based on prior projects at the airport and convenient access to the Project area from major transportation corridors.
- Noise-sensitive receptors along the identified roadways were identified based on land uses.
- Baseline roadway traffic noise conditions (2019) at the noise-sensitive receptors were calculated based on existing traffic conditions.
- A noise monitoring survey was conducted, with roadway traffic noise level measurements taken at eight locations in the general vicinity of LAX; the measured roadway traffic noise levels were compared against the calculated roadway traffic noise levels for each location as a means of validating the accuracy of the roadway traffic noise model. See Section 1.5 in **Appendix F.2** for details of the noise monitoring survey.
- Future roadway traffic noise conditions (2028) at the noise-sensitive receptors were calculated based on projected traffic conditions.
- Changes to the roadway traffic noise conditions at the noise-sensitive receptors that would result from the Project were evaluated to determine whether the changes would result in a significant roadway traffic noise impact.

4.7.2.2.1.1 Noise-Sensitive Receptors

A review of existing land uses was performed to identify noise-sensitive uses. Noise-sensitive uses are places that might contain noise-sensitive equipment; house or be used by individuals who are particularly susceptible to noise stimuli, such as children or the elderly; or provide accommodations for people to sleep. Noise-sensitive land uses typically include residences, hospitals, hotels, and schools, among others. The selection of noise-sensitive receptor locations to include in the impacts analysis took into account the proximity of noise-sensitive uses to the roadway system improvements associated with the proposed Project, both in terms of proximity to new roads that are proposed and relative to existing local roads that would be primary travel routes to and from the airport terminal areas. **Figure 4.7.2-1** shows the locations of the noise-sensitive receptors addressed in the impacts analysis, and **Table 4.7.2-1** describes the location of, and existing land use at, each receptor.



Legend

- Modeled Roadway Noise Analysis Receivers
- Airport Boundary
- Runway / Taxiway
- Roads

0 1,200 2,400 Feet

Scale

Source: HMMH, May 2020
Prepared by: CDM Smith,October 2020

LAX Airfield and Terminal Modernization Project	Roadway Noise Analysis Receivers	Figure 4.7.2-1

Table 4.7.2-1
Noise-Sensitive Receptors in Vicinity of the Project Area

Receiver ID	Receptor Description	Land Use	Nearest Roadway Contribution
R-001G	Hyatt Regency Pool	Hotel	Sepulveda Boulevard
R-002G	H Hotel Pool	Hotel	Century Boulevard
R-003G	Sheraton Gateway Hotel Pool	Hotel	Century Boulevard
R-004G	Crowne Plaza Hotel Pool	Hotel	Century Boulevard
R-005G	Residence Inn Hotel Pool	Hotel	Century Boulevard
R-006G	Los Angeles Airport Marriott Pool	Hotel	Century Boulevard/Airport Boulevard
R-007G	Four Points Hotel Pool	Hotel	98th Street
R-008G	Westchester Parkway and Will Rogers Neighborhood	SF Residential	Westchester Parkway
R-009G	Westchester Parkway and Will Rogers Neighborhood	SF Residential	Westchester Parkway
R-010G	W 88th Street and La Tijera Neighborhood	SF Residential	La Tijera Boulevard
R-011G	W 88th Street and La Tijera Neighborhood	SF Residential	La Tijera Boulevard
R-012G	W 88th Street and La Tijera Neighborhood	SF Residential	La Tijera Boulevard
R-013G	W 88th Street and La Tijera Neighborhood	SF Residential	La Tijera Boulevard
R-014G	Sepulveda West Apartments	MF Residential (1st Floor)	Sepulveda Boulevard
R-014F2	Sepulveda West Apartments	MF Residential (2nd Floor)	Sepulveda Boulevard
R-014F3	Sepulveda West Apartments	MF Residential (3rd Floor)	Sepulveda Boulevard
R-015G	Westchester City Park	Recreation	Lincoln Boulevard
R-016G	Westchester City Park	Recreation	Lincoln Boulevard
R-017G	Westchester City Park	Recreation	Lincoln Boulevard
R-018G	Westchester City Park	Recreation	Lincoln Boulevard

Source: **Appendix F.2** of this EIR.

Key:
G = Ground Floor; F2 = Second Floor; F3 = Third Floor; SF = single family; MF = multi-family

4.7.2.2.1.2 Existing and Future Roadway Traffic Noise Conditions

Roadway traffic noise levels for existing baseline and future conditions with implementation of the proposed Project were calculated using the latest version of the SoundPLAN noise model, a prediction and analysis software that implements the Federal Highway Administration's (FHWA) Traffic Noise Model Version 2.5 (TNM) to compute traffic noise.

Ambient roadway noise level measurements were also taken at each of the noise-sensitive receptor locations. In addition, traffic data were measured along various roadways (traffic counts and turning movements). The noise and traffic measurement data were used to confirm that baseline roadway traffic noise estimates from SoundPLAN were within acceptable limits.

The roadway network assumed in the calculation of roadway traffic noise levels for future (2028) conditions included the roadway improvements approved as part of the LAX Landside Access Modernization Program Phase 1 approvals, which would be completed and in use prior to 2028, and the roadway improvements currently proposed by the Project.

As identified in Section 4.7.2.4 below, two thresholds were used to determine if Project-related roadway traffic noise impacts would be significant. One threshold relies on the CNEL metric and the other relies on peak hour L_{eq}. In order to compare future roadway traffic noise levels with implementation of the proposed Project to existing baseline levels, existing baseline conditions were determined for each of these metrics.

For the CNEL analysis, the assessment of whether Project-related traffic would result in a significant increase in CNEL compared future (2028) changes in average daily traffic (ADT) associated with the proposed Project to existing ambient noise levels, including both average annual day aircraft noise and roadway noise associated with existing ADT on roadways near noise-sensitive receptors. Existing and future roadway traffic noise levels were calculated at noise-sensitive receptors throughout the analysis area using SoundPLAN. Existing aviation noise at each receptor was estimated using the Aviation Environmental Design Tool (AEDT, described in Section 4.7.1.2.1) based on LAX operations and fleet mix data for the time period used in the analysis. The two types of noise – aircraft noise and roadway traffic noise – were added together logarithmically to represent existing CNEL ambient noise levels.

For the L_{eq} analysis, the assessment of whether the proposed Project would result in a significant increase in L_{eq} compared future (2028) changes in peak-hour ("worst noise hour") traffic at noise-sensitive receptors with implementation of the proposed Project to existing and future peak-hour hourly traffic noise levels. Existing and future peak-hour hourly traffic noise levels, in terms of the hourly equivalent sound level ($L_{eq}(h)$), were calculated by SoundPLAN using hourly traffic volume data from the traffic demand model developed for the proposed Project, which considered vehicle mix and distributions.

While the CNEL ambient noise level reflects the total daily (24-hour) noise level with noise penalties applied during evening and nighttime hours, the existing roadway traffic L_{eq} noise level represents a peak-hour roadway traffic noise level, based on hourly traffic volumes on roadways near the noise-sensitive receptors. As noted above, future roadway traffic CNEL noise levels near noise-sensitive receptors were based on ADT traffic volumes in 2028 with implementation of the proposed Project. Future roadway traffic L_{eq} noise levels near noise-sensitive receptors were based on hourly traffic volumes in 2028 with implementation of the proposed Project. The differences between future roadway traffic noise levels and existing noise levels provided the basis for determining whether increases in noise levels would exceed the applicable threshold of significance.

4.7.2.2.1.3 Analysis of Combined Project-Related Noise

Increases in activity levels at LAX in the future, which would occur with or without the proposed Project, would result in more vehicle traffic and more aircraft operations, as evaluated earlier in Section 4.7.1, *Aircraft Noise*. Therefore, in addition to evaluating impacts of the proposed Project on aircraft noise and roadway noise individually (see Section 4.7.2.5), the combined impacts of Project-related aircraft noise and roadway traffic noise in 2028 were also evaluated (see Section 4.7.2.6). The combined future roadway traffic noise levels and future aircraft noise levels, measured in CNEL, were calculated for each of the noise-sensitive receptors and characterize the overall daily (24-hour) noise exposure level, including noise penalties for evening and nighttime noise.

4.7.2.3 Existing Conditions

4.7.2.3.1 Regulatory Setting

Federal Highway Administration Regulations

Title 23 of the Code of Federal Regulations, Part 772 (23 CFR 772) provides the framework and establishes the standards for the assessment and abatement of highway traffic noise in the United States. The FHWA regulations in 23 CFR 772 apply to all federal or federal-aid highway projects authorized under Title 23 of the United States Code. As defined in the regulations, a traffic noise impact would occur for a particular activity category when predicted exterior noise levels approach or exceed the FHWA-defined noise abatement criteria level during the loudest hour of the day for that category or when project-related noise creates a substantial noise increase over existing noise levels.

California Department of Transportation (Caltrans) Traffic Noise Analysis Protocol

The FHWA regulations in 23 CFR 772 require state highway agencies to prepare updated state-specific policies and procedures for applying the regulation in their state. Caltrans policies and procedures for implementing 23 CFR 772 are contained in the *Traffic Noise Analysis Protocol for New Highway Construction, Reconstruction, and Retrofit Barrier Projects*[1] (the Protocol) in the State of California. Caltrans also has published a guidance document that supplements the Protocol and serves to assist highway noise analysts with the technical aspects of traffic noise analysis.

According to the Caltrans Traffic Noise Analysis Protocol and consistent with 23 CFR 772, a traffic noise impact occurs when future project noise levels cause a substantial noise increase over existing noise. Specifically, a substantial increase occurs when a project's predicted worst-hour design-year noise level exceeds the existing worst-hour noise level by 12 dBA or more.

City of Los Angeles Municipal Code

The City of Los Angeles Municipal Code (LAMC) (Section 41.40 and Chapter XI, Articles 1 through 6) provides regulations regarding allowable increases in noise levels in terms of established noise criteria. Supplementing these LAMC regulations, the City has also established CNEL guidelines that are used for land use planning purposes (see discussion of City of Los Angeles Noise Element of the General Plan below).

Chapter XI of the Los Angeles Municipal Code (City of Los Angeles Noise Ordinance) establishes acceptable ambient sound levels to regulate intrusive noises within specific land use zones. In accordance with the City's Noise Ordinance, a noise level increase of 5 dBA over the existing average ambient noise level at an adjacent property line is considered a noise violation.

City of Los Angeles General Plan Noise Element

The Noise Element of the City of Los Angeles General Plan[2] addresses noise mitigation regulations, strategies, and programs and delineates federal, state, and City jurisdiction relative to rail, automotive, aircraft, and nuisance noise. The City of Los Angeles has adopted local guidelines based, in part, on the community noise compatibility guidelines established by the California Department of Health Services for use in assessing the compatibility of various land use types with a range of noise levels. CNEL guidelines for specific land uses are classified into four categories: (1) "normally acceptable," (2) "conditionally acceptable," (3) "normally unacceptable," and (4) "clearly unacceptable." As shown in **Table 4.7.2-2**, a CNEL value of 60 dBA is the limit at which the noise environment for multi-family residential uses changes from "normally acceptable" to "conditionally acceptable." A CNEL as high as 65 dBA is considered "conditionally acceptable." The limit of what is considered "normally unacceptable" for all residential uses is set at 75 dBA CNEL.

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1 California Department of Transportation, *Traffic Noise Analysis Protocol for New Highway Construction, Reconstruction, and Retrofit Barrier Projects*, April 2020. Available: https://dot.ca.gov/-/media/dot-media/programs/environmental-analysis/documents/env/traffic-noise-protocol-april-2020-a11y.pdf.

2 City of Los Angeles, Department of City Planning, *Noise Element of the Los Angeles City General Plan*, adopted February 3, 1999. Available: https://planning.lacity.org/odocument/b49a8631-19b2-4477-8c7f-08b48093cddd/Noise_Element.pdf.

Table 4.7.2-2
City of Los Angeles Guidelines for Noise Compatible Land Uses

Land Use Category	Day-Night Average Exterior Sound Level (CNEL dB)						
	50	55	60	65	70	75	80
Residential Single Family, Duplex, Mobile Home	A	C	C	C	N	U	U
Residential Multi-Family	A	A	C	C	N	U	U
Transient Lodging, Motel, Hotel	A	A	C	C	N	U	U
School, Library, Church, Hospital, Nursing Home	A	A	C	C	N	N	U
Auditorium, Concert Hall, Amphitheater	C	C	C	C/N	U	U	U
Sports Arena, Outdoor Spectator Sports	C	C	C	C	C/U	U	U
Playground, Neighborhood Park	A	A	A	A/N	N	N/U	U
Golf Course, Riding Stable, Water Recreation, Cemetery	A	A	A	A	N	A/N	U
Office Building, Business, Commercial, Professional	A	A	A	A/C	C	C/N	N
Agriculture, Industrial, Manufacturing, Utilities	A	A	A	A	A/C	C/N	N

Source: City of Los Angeles, Department of City Planning, *Noise Element of the Los Angeles City General Plan,* adopted February 3, 1999. Available: https://planning.lacity.org/odocument/b49a8631-19b2-4477-8c7f-08b48093cddd/Noise_Element.pdf.

Key:
A = Normally acceptable. Specified land use is satisfactory, based upon assumption buildings involved are conventional construction, without any special noise insulation.
C = Conditionally acceptable. New construction or development only after a detailed analysis of noise mitigation is made and needed noise insulation features are included in project design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning normally will suffice.
N = Normally unacceptable. New construction or development generally should be discouraged. A detailed analysis of noise reduction requirements must be made and noise insulation features included in the design of a project.
U = Clearly unacceptable. New construction or development generally should not be undertaken.

4.7.2.3.2 Environmental Setting

The proposed Project site is located in proximity to several busy roadways, including Century Boulevard, Sepulveda Boulevard, and other roadways that generate high levels of roadway traffic noise. In addition, ambient noise is characterized by aircraft noise and other urban noise sources.

Table 4.7.2-3 indicates the existing CNEL ambient noise level, and **Table 4.7.2-4** delineates the existing peak-hour L_{eq} roadway traffic noise level at each of the noise-sensitive receptor locations. As indicated in Table 4.7.2-3, the existing CNEL ambient noise levels range from 63.9 dBA at residences northwest of the intersection of Sepulveda Boulevard and Manchester Boulevard (Receptor R-014G) to 72.9 dBA at the H Hotel/Homewood Suites and residences northeast of the intersection of Kittyhawk Avenue and Westchester Parkway (Receptors R-002G and R-008G, respectively). As indicated in Table 4.7.2-4, the existing peak-hour L_{eq} roadway traffic noise levels range from 43.3 dBA at residences located north of W. 88th Street and east of Sepulveda Westway (Receptor R-012G) to 66.1 dBA at the H Hotel/Homewood Suites (Receptor R-002G).

Table 4.7.2-3
Change in Average Daily Traffic CNEL Compared to Existing Conditions

Receiver ID	Land Use	City of Los Angeles Land Use Noise Compatibility Maximum Acceptable CNEL	Existing 2019 CNEL	Project 2028 CNEL	Change between Existing (2019) and Project (2028) CNEL	Applicable CNEL Increase Threshold of Significance	Significant Impact for Project?
R-001G	Hotel	70	71.8	72.0	0.3	3	No
R-002G	Hotel	70	72.9	72.3	-0.6	3	No
R-003G	Hotel	70	69.1	70.0	0.8	3	No
R-004G	Hotel	70	69.7	70.1	0.4	3	No
R-005G	Hotel	70	71.9	72.0	0.0	3	No
R-006G	Hotel	70	70.7	70.8	0.1	3	No
R-007G	Hotel	70	70.0	70.8	0.8	3	No
R-008G	SF Residential	70	72.9	73.0	0.0	3	No
R-009G	SF Residential	70	72.6	72.6	0.0	3	No
R-010G	SF Residential	70	68.8	68.8	0.0	5	No
R-011G	SF Residential	70	68.8	68.8	0.0	5	No
R-012G	SF Residential	70	68.9	68.9	0.0	5	No
R-013G	SF Residential	70	68.9	68.9	0.0	5	No
R-014G	MF Residential (1st Floor)	70	63.9	63.9	-0.1	5	No
R-014F2	MF Residential (2nd Floor)	70	64.3	64.2	-0.1	5	No
R-014F3	MF Residential (3rd Floor)	70	66.0	65.9	-0.1	5	No
R-015G	Recreation	70	68.2	68.3	0.1	5	No
R-016G	Recreation	70	64.4	64.2	-0.2	5	No
R-017G	Recreation	70	65.3	65.2	0.0	5	No
R-018G	Recreation	70	65.2	65.2	0.0	5	No

Source: **Appendix F.2** of this EIR.

Key:
G = Ground Floor; F2 = 2nd Floor; F3 = Third Floor; SF = single family; MF = multi-family

Table 4.7.2-4
Change in Peak Hour Traffic L_{eq} Compared to Existing Conditions (dBA)

Receiver ID	Land Use	Existing 2019 Peak Hour L_{eq}	Project 2028 Peak Hour L_{eq}	Change between Existing (2019) and Project (2028) Peak Hour L_{eq}	Significant Impact for Project?[1]
R-001G	Hotel	53.0	57.5	4.5	No
R-002G	Hotel	66.1	64.6	-1.5	No
R-003G	Hotel	54.7	59.9	5.2	No
R-004G	Hotel	54.9	57.9	3.0	No
R-005G	Hotel	62.5	62.7	0.2	No
R-006G	Hotel	52.6	54.4	1.8	No
R-007G	Hotel	58.1	61.7	3.6	No
R-008G	SF Residential	63.9	64.1	0.2	No
R-009G	SF Residential	62.6	62.8	0.2	No
R-010G	SF Residential	44.4	45.2	0.8	No
R-011G	SF Residential	44.3	45.0	0.7	No
R-012G	SF Residential	43.3	43.4	0.1	No
R-013G	SF Residential	44.6	45.2	0.6	No
R-014G	MF Residential (1st Floor)	49.0	48.4	-0.6	No
R-014F2	MF Residential (2nd Floor)	51.8	51.2	-0.6	No
R-014F3	MF Residential (3rd Floor)	58.4	58.1	-0.3	No
R-015G	Recreation	62.7	62.3	-0.4	No
R-016G	Recreation	56.3	55.7	-0.6	No
R-017G	Recreation	54.8	54.3	-0.5	No
R-018G	Recreation	56.6	56.2	-0.4	No

Source: **Appendix F.2** of this EIR.

Note:
[1] Threshold of significance is 12 dB.

Key:
G = Ground Floor; F2 = Second Floor; F3 = Third Floor; SF = single family; MF = multi-family

4.7.2.4 Thresholds of Significance

The proposed Project would result in a significant impact related to roadway traffic noise if:

Threshold 4.7.2-1 Roadway traffic from the proposed Project causes the ambient noise level measured at the property line of affected noise-sensitive uses to increase by 3 dBA CNEL to or within the "normally unacceptable" or "clearly unacceptable" compatibility category, or by 5 dBA or greater within any category.

Threshold 4.7.2-2 Roadway traffic from the proposed Project causes the peak-hour L_{eq} to substantially exceed the existing L_{eq}, defined as an increase of 12 dB or more, at noise-sensitive receptors.

Threshold 4.7.2-1 is based on the City of Los Angeles' *L.A. CEQA Thresholds Guide*, which provides a significance threshold for operational noise, including roadway noise.[3] Threshold 4.7.2-2 is based upon FHWA and Caltrans regulations and guidelines pertaining to the evaluation of roadway traffic noise impacts, as described in Section 4.7.2.3.1.

4.7.2.5 Project Impacts

This section evaluates the potential for the proposed Project to result in a significant roadway traffic noise impact due to Project operation. Construction-related roadway traffic noise is addressed in Section 4.7.3, *Construction Traffic and Equipment Noise and Vibration*.

4.7.2.5.1 Impact 4.7.2-1

Summary Conclusion for Impact 4.7.2-1: Future roadway traffic associated with proposed Project operations would not cause existing ambient noise levels at noise-sensitive uses to increase by more than the allowable limits (i.e., 3 dBA CNEL or 5 dBA CNEL, as applicable). As such, this would be a *less than significant impact*.

4.7.2.5.1.1 Operational Impacts

As described in Chapter 2, *Description of the Proposed Project,* future growth in passenger activity is expected to occur at LAX with or without Project implementation. This growth in passenger activity will be accompanied by increased airport-related traffic on Project area roadways. In addition, the proposed Project would implement roadway improvements to improve queuing capacity into and out of the CTA and provide access to the new Terminal 9. These improvements would modify traffic patterns and introduce new elevated roadways in the Project area. Together, these changes associated with proposed Project operations would result in changes to roadway noise in the Project vicinity. Table 4.7.2-3 summarizes the change in the CNEL for the proposed Project in 2028 relative to existing baseline conditions.

As shown in Table 4.7.2-3, there are no instances in which the future CNEL from roadway noise under the proposed Project would exceed the allowable CNEL increase. Specifically, there are no instances in which the future CNEL from roadway noise under the proposed Project would increase by more than 3 dBA CNEL to or within the "normally unacceptable" or "clearly unacceptable" category, nor are there instances in which the future CNEL from roadway noise under the proposed Project would increase by more than 5 dBA CNEL in any category.

For example, as shown in Table 4.7.2-3, the existing exterior noise level at the Hyatt Regency hotel (Receptor R-001G) is 71.8. This receptor is classified under a "Hotel" land use category. As shown in Table 4.7.2-2, the 71.8 dBA CNEL corresponds to a "normally unacceptable" condition for the "Hotel" land use category. Because this receptor already falls within the "normally unacceptable" category, the significance threshold for this receptor is a 3 dBA CNEL increase in noise. As identified in Table 4.7.2-3, the proposed Project would result in a 0.3 dBA CNEL increase in noise levels relative to existing baseline conditions at this receptor. Since 0.3 dBA CNEL is less than the 3 dBA threshold, Project-related roadway traffic noise levels at this receptor would not exceed the significance threshold and would not result in a significant impact.

There are no receptor locations where existing roadway traffic noise CNELs would be increased by 3 dBA CNEL or more such that the noise level would increase to or within the "normally unacceptable" or "clearly unacceptable" categories. There are also no receptor locations where existing traffic noise CNELs

[3] City of Los Angeles, *L.A. CEQA Thresholds Guide, Your Resource for Preparing CEQA Analyses in Los Angeles*, 2006. Available: https://planning.lacity.org/odocument/cc8fb2f5-dc6c-47f1-bfc3-864b84621abb/CEQAThresholdsGuide.pdf.

would be increased by 5 dBA CNEL or more in any category. Therefore, roadway traffic noise associated with operation of the proposed Project would not exceed the levels established for noise compatible land uses, and noise impacts would be ***less than significant***.

4.7.2.5.1.2 Mitigation Measures

Because the proposed Project would result in a ***less than significant impact*** relative to roadway traffic noise, no mitigation is required.

4.7.2.5.1.3 Significance of Impact After Mitigation

As indicated above, no mitigation is required to address roadway traffic noise. The proposed Project would result in a ***less than significant impact***.

4.7.2.5.2 Impact 4.7.2-2

Summary Conclusion for Impact 4.7.2-2: Future roadway traffic associated with proposed Project operations would not cause future noise levels in the worst-hour to exceed existing ambient noise levels at noise-sensitive uses by 12 dBA or more. As such, this would be a *less than significant impact*.

4.7.2.5.2.1 Operational Impacts

In addition to considering impacts to 24-hour average noise levels, operational impacts were also evaluated based on the predicted worst-hour noise levels in 2028 associated with operation of the proposed Project. Table 4.7.2-4 provides the TNM-computed $L_{eq}(h)$ for existing baseline conditions (from SoundPLAN) during the loudest hour of the day. This table also summarizes the change in noise levels (L_{eq}) from worst-hour traffic for the proposed Project in 2028, and compares those peak noise levels to existing baseline conditions.

As shown in Table 4.7.2-4, the change in the hourly $L_{eq}(h)$ associated with the proposed Project would range from approximately -1.5 to 5.2 dBA relative to existing baseline conditions. The largest increases in hourly traffic noise levels would be expected to occur along new Project roadways located east of Sepulveda Boulevard and north of Century Boulevard, as well as from future increases in traffic on existing roadways in that general area. The roadway noise receptor points shown in Figure 4.7.2-1 represent noise-sensitive land uses in the Project area considered to be most vulnerable to noise resulting from future increases in traffic. As shown in Table 4.7.2-4, all the increases in the future hourly $L_{eq}(h)$ relative to existing baseline conditions would be substantially less than 12 dBA. Therefore, the predicted worst-hour roadway noise impacts from operation of the proposed Project would be ***less than significant***.

4.7.2.5.2.2 Mitigation Measures

Because the proposed Project would result in a ***less than significant impact*** relative to roadway traffic noise, no mitigation is required.

4.7.2.5.2.3 Significance of Impact After Mitigation

As indicated above, no mitigation is required to address roadway traffic noise. The proposed Project would result in a ***less than significant impact***.

4.7.2.6 Combined Roadway Traffic Noise and Aircraft Noise

The analysis above addresses the potential for proposed Project operations to result in significant noise impacts associated with future increases in roadway traffic in 2028. As noted in Section 4.7.2.2.1.3, it is recognized that increases in activity levels at LAX in the future that would result in more vehicle traffic would also result in more aircraft operations, as evaluated in Section 4.7.1, *Aircraft Noise*. Therefore, in addition to evaluating impacts of the proposed Project on aircraft noise and roadway noise individually,

the combined impacts of Project-related aircraft noise and roadway traffic noise in 2028 were also evaluated, measured in CNEL. **Table 4.7.2-5** presents the combined future roadway traffic noise levels and future aircraft noise levels calculated for each of the noise-sensitive receptors. As shown in Table 4.7.2-5, there are no instances in which the future CNEL from combined roadway traffic and aircraft noise under the proposed Project would exceed the allowable CNEL increase (3 dBA CNEL for "normally unacceptable" or "clearly unacceptable" land use compatibility categories, or 5 dBA CNEL for all categories). Therefore, combined roadway traffic noise and aircraft noise associated with operation of the proposed Project would not exceed the levels established for noise compatible land uses, and combined roadway and aircraft noise impacts would be ***less than significant***.

Table 4.7.2-5
Computed Noise Levels for Future Traffic Noise and Aircraft Noise Combined

Receiver ID	Land Use	Los Angeles Development Land Use Noise Compatibility-Maximum Acceptable CNEL	Existing 2019 CNEL	Project 2028 CNEL	Change between Existing (2019) and Project (2028) CNEL	Applicable CNEL Increase Threshold of Significance	Significant Impact for Project?
R-001G	Hotel	70	71.8	71.9	0.1	3	No
R-002G	Hotel	70	72.9	72.2	-0.7	3	No
R-003G	Hotel	70	69.1	69.8	0.7	5	No
R-004G	Hotel	70	69.7	69.9	0.2	5	No
R-005G	Hotel	70	71.9	71.8	-0.2	3	No
R-006G	Hotel	70	70.7	70.5	-0.2	3	No
R-007G	Hotel	70	70.0	70.6	0.6	3	No
R-008G	SF Residential	70	72.9	73.1	0.1	3	No
R-009G	SF Residential	70	72.6	72.7	0.2	3	No
R-010G	SF Residential	70	68.8	68.6	-0.2	5	No
R-011G	SF Residential	70	68.8	68.7	-0.2	5	No
R-012G	SF Residential	70	68.9	68.7	-0.2	5	No
R-013G	SF Residential	70	68.9	68.7	-0.2	5	No
R-014G	MF Residential (1st Floor)	70	63.9	63.7	-0.3	5	No
R-014F2	MF Residential (2nd Floor)	70	64.3	64.0	-0.3	5	No
R-014F3	MF Residential (3rd Floor)	70	66.0	65.8	-0.3	5	No
R-015G	Recreation	70	68.2	68.3	0.2	5	No
R-016G	Recreation	70	64.4	64.2	-0.2	5	No
R-017G	Recreation	70	65.3	65.3	0.1	5	No
R-018G	Recreation	70	65.2	65.3	0.1	5	No

Source: **Appendix F.2** of this EIR.

Key:
G = Ground Floor; F2 = Second Floor; F3 = Third Floor; SF = single family; MF = multi-family

The conclusion that the combined aircraft noise and roadway noise levels associated with operation of the Project in 2028 would not result in a significant impact is not inconsistent with the conclusion of the aircraft noise analysis in Section 4.7.1.5.1 (Impact 4.7.1-1) that the aircraft noise levels associated with operation of the Project in 2028 alone would result in a significant impact. The reason for these different conclusions is that the nature and locations of the impacts are fundamentally different. As shown in Figure 4.7.1-9 in the aircraft noise analysis (Section 4.7.1), the significant aircraft noise impacts, defined in terms of noise sensitive uses being newly exposed in 2028 to an exterior noise level of 65 dBA CNEL

compared to 2018 Baseline conditions, would occur in areas located several miles east of LAX. As indicated in that figure, areas closer to the airport, such as those represented by noise Receptors R-001 through R-0018, would not be newly exposed to an exterior noise level of 65 dBA CNEL, and would experience little, if any, increase over baseline noise levels.[4] This is reflected in Table 4.7.2-5, which shows only small increases in existing (baseline) noise levels even when Project-related traffic volumes are added; hence, the increases would be less than the 5 dBA threshold of significance for roadway noise. In those areas farther to the east where the increases in aircraft noise are projected to result in a significant impact, the addition of Project-related traffic would be negligible because it would be dispersed onto many other roadways in many other directions before reaching such areas. As such, the differences in significance conclusions are sound, based on differences in the nature and locations of impacts.

4.7.2.6.1 Mitigation Measures

Because the proposed Project would result in a ***less than significant impact*** relative to combined roadway traffic and aircraft noise, no mitigation is required.

4.7.2.6.2 Significance of Impact After Mitigation

As indicated above, no mitigation is required to address combined roadway traffic and aircraft noise. The proposed Project would result in a ***less than significant impact***.

4.7.2.7 Cumulative Impacts

The geographical area of the cumulative impacts analysis for roadway traffic noise includes the area surrounding LAX that includes major access routes to the airport. As illustrated in Figure 4.7.2-1, the geographical area is generally bound by Manchester Boulevard to the north, Aviation Boulevard to the east, Century Boulevard to the south, and Lincoln Boulevard to the west. Table 3-1 in Chapter 3, *Overview of Project Setting*, identifies development projects at or adjacent to LAX. These projects are shown in Figure 3-1. Of the projects identified in Table 3-1, those whose operational traffic would be most likely to use the same roads as the proposed Project due to their location include the LAX Northside Development, the LAX Landside Access Modernization Program, the various terminal projects, and the Airport Metro Connector 96th Street Transit Station.

Although the cumulative development projects would result in an increase in traffic on portions of the same roadway system used by operational traffic from the proposed Project, traffic from the combination of these cumulative projects and the proposed Project would not result in roadway traffic noise levels that would exceed the significance thresholds. Project-related roadway traffic noise levels in 2028 were calculated using hourly traffic volume data from the traffic demand model developed for the proposed Project, including vehicle mix and distributions. As described in Section 4.8, *Transportation,* the approach used in the transportation analysis is inherently cumulative in nature. The Project Travel Demand Model included future development projects, including both the LAX projects listed above and projects in surrounding jurisdictions. In addition, the Project Travel Demand Model was based on future socioeconomic and demographic information from the Southern California Association of Governments (SCAG). As a result, the traffic volume data used to calculate roadway traffic noise, and the associated roadway noise impacts identified in Section 4.7.2.5 and Section 4.7.2.6, account for future cumulative conditions; hence, traffic from such cumulative projects in included in the roadway noise calculations. As shown in Table 4.7.2-3 and Table 4.7.2-4, and discussed in Section 4.7.2.5 and Section 4.7.2.6, future roadway traffic noise would not exceed the significance thresholds and cumulative roadway traffic noise would be ***less than significant***.

[4] Those areas would also not experience an increase of 1.5 dBA CNEL or more in exterior noise levels, which is the other threshold of significance applied to aircraft noise impacts – see Figure 4.7.1-10.

Table 4.7.2-5, which represents combined roadway traffic noise and aircraft noise, is also inherently cumulative. As described above, the roadway traffic noise component of the combined noise analysis accounts for cumulative development in the Project area. The aircraft noise component of the combined analysis similarly accounts for all future aircraft-related noise, as none of the cumulative projects would contribute to aircraft noise (i.e., none of the cumulative projects would add aircraft operations or change the operational characteristics of flights). As described in Section 4.7.2.6, future combined roadway traffic and aircraft noise would not exceed the significance thresholds; therefore, combined roadway and aircraft noise impacts would be ***less than significant***.

4.7.2.8 Summary of Impact Determinations

Table 4.7.2-6 summarizes the impact determinations of the proposed Project related to roadway traffic noise, as described above in Sections 4.7.2.5 and 4.7.2.6. Impact determinations are based on the significance criteria presented in Section 4.7.2.4, and the information and data sources cited throughout Section 4.7.2.

Table 4.7.2-6
Summary of Impacts and Mitigation Measures Associated with the Proposed Project Related to Roadway Traffic Noise

Environmental Impacts	Impact Determination	Mitigation Measures	Level of Significance After Mitigation
Impact 4.7.2-1: Future roadway traffic associated with proposed Project operations would not cause existing ambient noise levels at noise-sensitive uses to increase by more than the allowable limits. This would result in a ***less than significant impact*** for operations.	Operations: Less than Significant Construction: Not applicable	Operations: No mitigation is required Construction: Not applicable	Operations: Less than Significant Construction: Not applicable
Impact 4.7.2-2: Future roadway traffic associated with proposed Project operations would not cause future noise levels in the worst-hour to exceed existing ambient noise levels at noise-sensitive uses by 12 dBA or more. This would result in a ***less than significant impact*** for operations.	Operations: Less than Significant Construction: Not applicable	Operations: No mitigation is required Construction: Not applicable	Operations: Less than Significant Construction: Not applicable
Impact 4.7.2-6: Combined roadway traffic noise and aircraft noise associated with operation of the proposed Project would not cause ambient noise levels at noise-sensitive uses to increase by more than the allowable limits. This would result in a ***less than significant impact*** for operations.	Operations: Less than Significant Construction: Not applicable	Operations: No mitigation is required Construction: Not applicable	Operations: Less than Significant Construction: Not applicable

4.7.3 Construction Traffic and Equipment Noise and Vibration

4.7.3.1 Introduction

This section addresses noise and vibration impacts associated with construction-related traffic and operation of construction equipment during development of the proposed Project.

Section 4.7.1.1.1 provides an overview of the basics of sound and the metrics used to measure and characterize noise, and describes typical noise levels associated with various construction activities.

4.7.3.1.1 General Characteristics of Construction-Related Noise

The general characteristics of noise are described in Section 4.7.1.1.1; additional information regarding characteristics associated with roadway traffic noise is provided in Section 4.7.2.1.1. The following describes how noise characteristics relate to construction traffic noise and construction equipment noise.

4.7.3.1.1.1 General Characteristics of Construction Traffic Noise

As noted above, general characteristics of roadway traffic-related noise are described in Section 4.7.2. As described in that section, if a road has free-flowing uninterrupted traffic conditions, sound levels increase at a rate of 3 dBA per doubling of traffic volume. However, if a road has saturated or constrained traffic conditions, sound levels will get progressively quieter from an increase in traffic volumes based on decreasing speeds, reduced engine operation levels, reduced drive-train and tire rotations, and reduced wind shear.

4.7.3.1.1.2 General Characteristics of Construction Equipment Noise

Construction activities typically generate noise from the operation of equipment required for demolition, excavation and grading, and construction of various facilities. Typical noise levels associated with common construction equipment types generally range from 70 dBA for a power generator, as measured at a distance of 50 feet, to 95 dBA for a pile driver, as measured as a distance of 50 feet.[1] More detailed information regarding noise levels associated with other specific types of construction equipment is provided in Table 2 of **Appendix F.3**.

Construction noise typically dissipates at a rate of approximately 6.0 dB for each doubling of distance (between the noise source and the receptor). As an example, construction equipment with mufflers (independent of background ambient noise levels) during excavation and grading may generate a noise level of approximately 86 dBA L_{eq} at 50 feet from the noise source. Based on a sound dissipation rate of 6 dB per doubling of distance, a sound level of 86 dBA at 50 feet from the noise source would be approximately 80 dBA at a distance of 100 feet, 74 dBA at a distance of 200 feet, and so on. That sound drop-off rate does not take into account any intervening shielding (including landscaping or trees) or barriers, such as structures or hills between the noise source and noise receptor. A barrier that breaks the line-of-sight between a source and a receiver will typically result in at least 5 dB of noise reduction. A higher barrier may provide as much as 20 dB of noise reduction.

[1] Fifty feet is the standard reference distance used in U.S. Department of Transportation, Federal Highway Administration guidance, including guidance for the evaluation of construction equipment noise (U.S. Department of Transportation, Federal Highway Administration. *FHWA Roadway Construction Noise Model, Version 1.0 User's Guide*, Table 1. Available: https://www.gsweventcenter.com/Draft_SEIR_References/2006_01_Roadway_Construction_Noise_Model_User_Guide_FHWA.pdf.

4.7.3.1.2 General Characteristics of Vibration

Vibration is the periodic movement of mass over time. The Federal Transit Administration's (FTA) *Transit Noise and Vibration Impact Assessment Manual*[2] identifies vibration as an oscillatory[3] motion that can be described in terms of displacement, velocity, or acceleration. Displacement is the distance that a point on the floor moves from its static position, velocity represents the instantaneous speed of the floor movement, and acceleration is the rate of change of the speed. The response to vibration is most accurately described using velocity or acceleration.

Ground-borne vibration is the perceptible movement of building floors, rattling windows and doors, shaking of items on shelves or walls, and rumbling sounds. Construction-related sources of notable levels of vibration are relatively limited. One such source is the operation of heavy construction equipment, which can create vibrations that travel from the source as energy waves that move through the soil mass and rock strata to the foundations of nearby buildings. The vibration then propagates from the foundation to the building structure. Vibration from operation of construction equipment can, at certain levels, result in damage to buildings, including structural damage (e.g., cracking of floor slabs, foundations, columns, beams, or wells) or cosmetic architectural damage (e.g., cracked plaster, stucco, or tile). However, energy waves rapidly dissipate with distance from the vibration source, due to spreading of the energy and frictional losses. Thus, ground-borne vibrations from most construction activities very rarely reach the levels that can damage buildings.[4] Soil and subsurface conditions also influence levels of ground-borne vibration; for example, vibration levels are typically higher in stiffer clay soils as compared to loose sandy soil, and in areas where bedrock depth is 30 feet or less.

Construction that can result in significant levels of ground vibration generally falls into two categories that are best characterized by the cause of the vibration and its duration. Vibration that is steady-state and more or less continuous can be caused by vibratory compaction of soil, movement of large equipment, and other sources. In contrast, vibration that is more transient in nature and intermittent due to impulsive forces can be caused by pile driving and rock blasting. Neither pile driving nor rock blasting would be utilized during construction of the proposed Project. Therefore, the potential for the proposed Project to result in vibration impacts would be associated with equipment that can cause steady-state, continuous vibration.

Vibration levels related to stresses experienced by buildings are estimated using peak particle velocity (ppv), which is the maximum instantaneous positive or negative peak of the vibration signal, usually measured in inches per second (in/sec).

4.7.3.2 Methodology

4.7.3.2.1 Construction Traffic Noise

This section describes the methodology used to evaluate the potential impacts from construction traffic noise. Project impacts were determined by identifying major roadways near the airport that may be used for construction-related worker commute route or truck haul routes, assessing their traffic volumes, identifying noise-sensitive receptors along these routes, and evaluating the potential for construction-related traffic to have a noticeable effect on noise at these receptors. Proposed construction

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2 U.S. Department of Transportation, Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual,* September 2018. Available: https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf.

3 To move or swing back and forth at a regular speed.

4 U.S. Department of Transportation, Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual,* September 2018. Available: https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf.

haul routes are identified in Figure 2-29. The major roadways near the airport that may be used for construction-related worker trips were determined by qualitatively assessing the viability of routes based on prior projects at the airport and convenient access to the Project area from major transportation corridors. Relative to distributing traffic on the construction traffic study area roadway network, it was assumed that construction employee trips would originate from geographic locations in proportion to the distribution of regional population, and specific street routing assumptions would be generally consistent with those of other previous LAX construction projects.[5]

4.7.3.2.2 Construction Equipment Noise

Noise impacts from Project construction equipment were evaluated by considering the different types of construction activities, calculating construction-related noise levels at nearby noise-sensitive receptor locations, and comparing these construction-related noise levels to existing ambient noise levels (i.e., noise levels without Project-related construction noise). Noise-sensitive receptors near the airport were determined by identifying land uses in the vicinity of the airport that may house or accommodate members of the population who are particularly sensitive to noise impacts. Such land uses typically include residences, schools, libraries, hospitals, day-care facilities, convalescent/retirement homes, and parks,[6] and for the proposed Project, include residences, hotels, and a school in the vicinity of Project construction sites. **Figure 4.7.3-1** shows representative types of noise-sensitive receptors located in the vicinity of construction areas for the proposed Project.

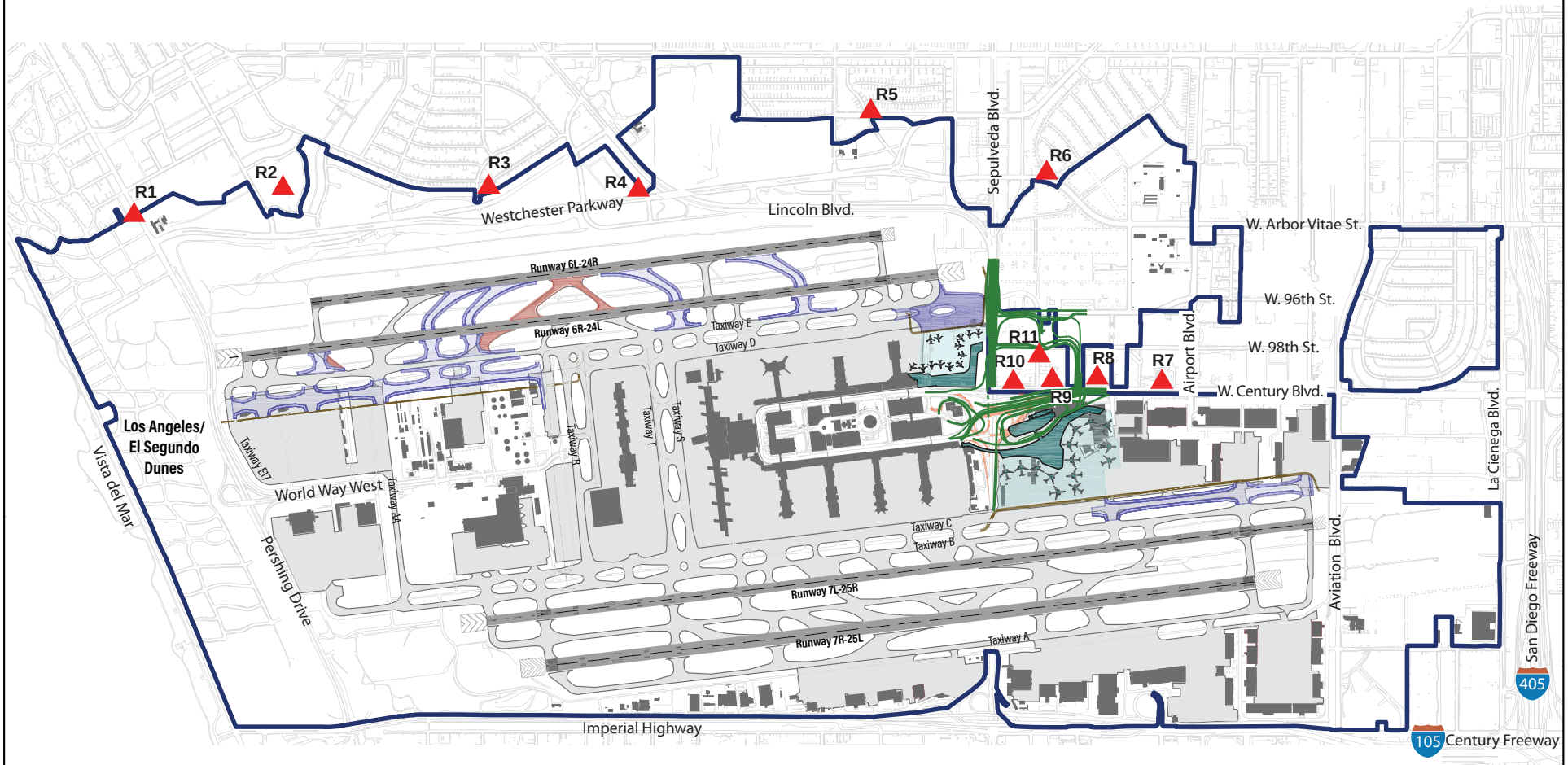
More specifically, the following steps were undertaken to calculate construction-period noise levels:

- Existing (ambient) CNEL dBA noise levels at surrounding noise-sensitive receptor locations were estimated based on aircraft noise levels that were modeled in the Federal Aviation Administration's (FAA) Aviation Environmental Design Tool (AEDT) for existing conditions (since aircraft noise is the dominant noise source for areas around LAX, the aircraft noise modeling provides an effective way to estimate existing noise levels in proximity to the nearby noise-sensitive receptors).
- Typical noise levels for each type of construction equipment were obtained from the Federal Highway Administration's (FHWA) Roadway Construction Noise Model (RCNM). Construction equipment expected to be used for the proposed Project was identified for each project component (i.e., airfield improvements, terminal improvements, and landside improvements). Usage factors for equipment types were included in the calculations, based on factors identified by FHWA as being typical for construction of roadway infrastructure projects and are consistent with the roadway construction efforts for the proposed Project. Details regarding the typical noise levels and the types of equipment to be used are provided in Table 2 of **Appendix F.3**.
- Distances between construction sites and construction staging area locations (i.e., Project-related noise sources) and surrounding noise-sensitive receptors were measured using Project plans and aerial imagery from building facades or outdoor use areas to nearest edge of construction activity in the preliminary construction plans.

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5 City of Los Angeles, Los Angeles World Airports, *Final Environmental Impact Report for Los Angeles International Airport (LAX) Landside Access Modernization Program*, (SCH 2015021014), Section 4.12.3 – Construction Surface Traffic, Figure 4.12.3-3 - Proposed Project Construction Vehicle Routes & Trip Distribution, February 2017. Available: https://www.lawa.org/en/connectinglax/automated-people-mover/documents.

6 City of Los Angeles. *L.A. CEQA Thresholds Guide*, *Your Resource for Preparing CEQA Analyses in Los Angeles*, 2006. Available: https://planning.lacity.org/odocument/cc8fb2f5-dc6c-47f1-bfc3-864b84621abb/CEQAThresholdsGuide.pdf.



Legend

- Construction Noise Analysis Receptors
- LAX Property Boundary
- Airfield Improvements
- Terminal and Related Improvements
- Taxiway to be Removed or Decommissioned
- Roadway Improvements
- Roadway to be Demolished

Note: See Table 4.7.3-1 for description of land use setting at each receptor location.

0 1,500 3,000 Feet

Scale

Source: HMMH, June 2020; CDM Smith, June 2020
Prepared by: CDM Smith, October 2020

LAX Airfield and Terminal Modernization Project

Noise-Sensitive Receptors in the Vicinity of Construction Sites

Figure 4.7.3-1

- Construction noise levels were calculated for noise-sensitive receptor locations based on the conventional standard point source noise-distance attenuation factor of 6.0 dBA for each doubling of distance. Construction noise levels were quantified at predetermined distances from the construction sites and staging areas using CNEL, as further described below. These calculations are considered conservative, as they do not account for noise reductions from intervening structures, walls, or other barriers.
- Calculated noise levels associated with Project construction at noise-sensitive receptor locations were then assessed an evening noise penalty of +5 dBA and a nighttime noise penalty of +10 dBA, consistent with noise weighting for determining the 24-hour CNEL dBA as further described below, and then logarithmically added to the existing ambient CNEL dBA AEDT noise levels to determine total sound level CNEL.
- Calculated total noise levels at noise-sensitive receptor locations were then compared to estimated existing ambient noise levels and the identified construction noise significance thresholds.

To determine background ambient sound levels from aircraft noise, the FAA's AEDT modeling program was utilized. Due to the proximity of these sites to LAX, this approach was determined to be appropriate. AEDT models aircraft performance in space and time to estimate noise levels. Utilizing flight data acquired through LAX's Airport Noise Monitoring and Management (ANOM) system for the fourth quarter of 2018 through the third quarter of 2019, background ambient sound levels from aircraft noise were determined at various noise-sensitive receptor locations in the vicinity of LAX (see **Table 4.7.3-1**). Noise levels at the locations identified in Table 4.7.3-1 are considered representative of other locations in proximity thereto.

It is anticipated that the majority of construction activities would occur during daytime hours (i.e., typically between 7:00 a.m. and 3:30 p.m.). It is likely that there could be some limited periods when construction activities are scheduled to occur both during the daytime and nighttime hours, as second and third shifts would be used for work activities that cannot normally be accomplished during the daytime shift. Examples of such activities include, but are not limited to, large-scale pours of concrete when it would be necessary to maintain a continuous stream of concrete deliveries and placement through multiple shifts, or when it is safer and more efficient to complete airfield improvement work late at night when aircraft activity levels are very low.

Table 4.7.3-1
Existing Conditions at Construction Noise-Sensitive Receptors

ID	Receiver Location	Background Conditions CNEL (dB)[1]	Land Use Setting
Construction Activity Receptors			
R1	Residential development in Playa del Rey	67.8	Residential north of airport
R2	Saint Bernard High School	67.7	High school in a residential area north of airport
R3	Residential development along southern edge of Westchester	68.4	Residential north of airport
R4	Park West Apartments on Lincoln Boulevard	66.3	Residential north of airport
R5	Residential uses along West 88th Street near Liberator Ave	67.9	Residential north of airport
R6	Residential uses near Westchester Parkway and Kittyhawk Ave	72.0	Residential north-east of airport
R7	Residence Inn by Marriott Los Angeles LAX/Century Boulevard	70.2	Commercial east of airport
R8	Sheraton Gateway Los Angeles Hotel	69.3	Commercial east of airport

Table 4.7.3-1
Existing Conditions at Construction Noise-Sensitive Receptors

ID	Receiver Location	Background Conditions CNEL (dB)[1]	Land Use Setting
R9	H Hotel Los Angeles/Homewood Suites by Hilton Los Angeles International Airport	70.4	Commercial east of airport
R10	Hyatt Regency Los Angeles International Airport	73.4	Commercial east of airport
R11	Courtyard Los Angeles LAX/Century Boulevard	71.7	Commercial east of airport
Construction Staging Area Receptors			
S1	This receptor is the same as Receptor R3		
S2	This receptor is the same as Receptor R4		
S3	Residential uses along West 88th Street near Sepulveda Westway	68.2	Residential north of airport
S4	Residential uses along Lilienthal Avenue near Airport Blvd	71.1	Residential north-east of airport
S5	Residential uses north of Arbor Vitae St between Airport Blvd and Bellanca Ave	74.0	Residential north-east of airport
S6	Renaissance Los Angeles Airport Hotel	68	Commercial east of airport
S7	This receptor is the same as Receptor R9		
S8	Residential uses within Del Aire near Aviation Blvd	65.9	Residential south of airport

Source: **Appendix F.3** of this EIR.

Note:
[1] Background condition obtained through AEDT.

To evaluate the potential noise impacts of such occurrences, the CNEL metric was chosen to quantify the 24-hour noise levels, which includes a noise weighting "penalty" for noise occurring during evening and nighttime hours. To calculate the A-weighted CNEL level by receiver location for construction equipment noise at the Project construction sites and construction staging areas, hourly activity and usage factors (i.e., the percentage of time that equipment would be active during each hour of a 24-hour day) were used to calculate an hourly equivalent noise level (L_{eq} dBA) for each phase of construction. To calculate the CNEL dBA, each corresponding construction phase L_{eq} dBA was logarithmically averaged for a 24-hour period with a penalty-weighting of 5dBA for evening hours (7:00 p.m. to 9:59 p.m.) and of 10dBA for nighttime hours (10:00 p.m. to 6:59 a.m.) applied. The construction CNEL dBA was logarithmically added to the background CNEL dBA to calculate the total CNEL dBA for a given receiver location. The total noise level was then compared to the significance threshold and exceedances identified. Additional details regarding equipment activity/usage factors and hourly average sound levels, including the noise penalty where applicable, representative of the construction equipment mix associated with the three major types of Project improvements – specifically, airfield improvements, terminal improvements, and landside access (i.e., roadway) improvements – are provided in **Appendix F.3**. The appendix also identifies the factors associated with activities at construction staging areas, including staging areas with materials processing, such as a concrete batch plant or a materials (rock) crusher, and staging areas without any materials processing. Based on these assumptions, the daily CNEL for each type of construction activity and for the construction staging areas were estimated to be as follows:

- Airfield Construction Activity: 96.6 dBA at a distance of 50 feet
- Concourse/Terminal Construction Activity: 97.0 dBA at a distance of 50 feet
- Roadway System Construction Activity: 97.0 dBA at a distance of 50 feet

- Construction Staging Area Activity (With Materials Processing): 91.0 dBA at a distance of 50 feet
- Construction Staging Area Activity (No Materials Processing): 78.0 dBA at a distance of 50 feet

It should be noted that the daily CNEL values estimated for the construction activities and the staging area are very conservative because they assume that all construction equipment associated with each type construction activity or at the staging area would be in use at the same time, and that all construction equipment would be used in every hour of the day. These assumptions are conservative, and overstate actual construction noise, because construction activities are temporally dynamic, the amount of equipment in use at any one time fluctuates throughout the day, and most proposed construction equipment is used intermittently, rather than continuously.

4.7.3.2.3 Construction Equipment Vibration

The construction-related vibration impacts of the proposed Project were evaluated using guidance developed by the FTA. FTA's guidance manual includes procedures for assessing noise and vibration impacts associated with construction of proposed mass transit projects that are applicable to other types of construction, including the proposed Project. The guidelines identify construction vibration damage criteria by building structural category as shown in **Table 4.7.3-2** below. These criteria are measured in ppv, which, as previous identified, is related to the stresses that are experienced by buildings.

Table 4.7.3-2
FTA Construction Vibration Damage Criteria

Building/Structural Category	PPV (in/sec)
I. Reinforced-concrete, steel or timber (no plaster)	0.5
II. Engineered concrete and masonry (no plaster)	0.3
III. Non-engineered timber and masonry buildings	0.2
IV. Buildings extremely susceptible to vibration damage	0.12

Source: U.S. Department of Transportation, Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual,* September 2018. Available: https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf.

Key:
ppv – peak particle velocity; in/sec – inches per second

Impacts due to construction activities were evaluated by identifying the proposed Project's vibration sources (i.e., construction equipment), measuring the distance between vibration sources and the surrounding structures that may be suspectable to vibration impacts, and comparing these to the FTA construction vibration damage criteria. The analysis focused on the potential for vibration impacts to nearby historic buildings, as these are more likely to be susceptible to vibration damage. The vibration source levels for various types of equipment were based on data in the FTA guidance manual.

Operation of the proposed Project would not generate ground-borne vibration, therefore, operational vibration is not addressed further in this EIR.

4.7.3.3 Existing Conditions

4.7.3.3.1 Regulatory Setting

A discussion of the City of Los Angeles General Plan Noise Element is provided in Section 4.7.1.3.1.3.

4.7.3.3.1.1 City of Los Angeles Noise Regulation

The City of Los Angeles Municipal Code (LAMC) (Chapter IV, Article I, Section 41.40, and Chapter XI, Articles 1 through 6) establishes regulations regarding allowable increases in noise levels in terms of established noise criteria. Supplementing these LAMC regulations, the City has also established CNEL guidelines that are used for land use planning purposes. Section 41.40 of the LAMC regulates construction that utilizes power equipment that generates loud noises. This regulation includes various restrictions on noise-generating activities and defines procedures for administering the regulations, including definitions of applicability and provisions for variances or exemptions.[7]

Chapter XI of the Los Angeles Municipal Code (City of Los Angeles Noise Ordinance) establishes acceptable ambient sound levels to regulate intrusive noises (e.g., stationary mechanical equipment and vehicles other than those traveling on public streets, including, but not limited to, those used for construction activity within specific land use zones). However, the provisions of Chapter XI do not apply to construction noise.

4.7.3.3.2 Environmental Setting

4.7.3.3.2.1 Noise

In general, the noise setting at and around LAX is influenced primarily by aircraft operations (takeoffs and landings). The existing aircraft noise levels in the vicinity of LAX that are delineated in the LAX 1st Quarter 2019 Noise Monitoring Report are representative of existing (baseline) ambient noise levels at the time the LAX Airfield and Terminal Modernization Project Notice of Preparation was published.[8] In addition to aircraft activities, the noise setting around LAX is influenced by vehicular traffic on major highways including I-405 and I-105, and several major arterial roads including, but not limited to, Imperial Highway, Sepulveda Boulevard, Century Boulevard, and Lincoln Boulevard.

Noise-sensitive receptors in the vicinity of Project construction sites (Airfield Improvements, Roadway Improvements, Concourse 0 site, and Terminal 9 site) and staging areas (see Figure 2-29) include residential uses, a school, and hotels in the vicinity of LAX (see Figure 4.7.3-1). As described above, existing noise levels at the identified noise-sensitive receptor locations were estimated on AEDT modeling and are provided in Table 4.7.3-1.

4.7.3.3.2.2 Vibration

As noted in Section 4.7.3.2.3, the analysis focused on the potential for impacts to nearby historic buildings, as these are more likely to be susceptible to vibration damage. There are four historical resources located on the Project site that are within 200 feet of construction activities. The four properties are listed in **Table 4.7.3-3** below and described further in Section 4.2, *Cultural Resources (Historical Resources)*, and **Appendix D** of this EIR. Of the four properties, all but one (the former Aircraft School Building), were constructed in the 1960s with reinforced concrete and steel. The former Aircraft School Building is timber and masonry, constructed in the 1940s. Therefore, of the four historical buildings, the former Aircraft School Building is considered the most susceptible to vibration damage during construction. Further, at 45 feet from the nearest construction activities, the former Aircraft School Building is the closest historical resource in distance to proposed Project construction activities.

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[7] Chapter IV, Section 41.40(j) empowers the Executive Director of the Board of Police Commissioners to make a determination that Section 41.40(c) of the regulations do not apply to major public works projects undertaken by the City of Los Angeles and its proprietary departments.

[8] City of Los Angeles, Los Angeles World Airports, *California State Airport Noise Standards Quarterly Report, First Quarter 2019, Los Angeles International Airport*, May 1, 2019. Available: https://www.lawa.org/-/media/lawa-web/noise-complaint-quarterly/2019/1q19/1q19-20190501-quarterly-report.ashx, accessed December 19, 2019.

Table 4.7.3-3
Buildings in Proximity to Construction Activity

Map #	Property	Address	Building/ Structural Category	Date	Closest Distance to the Construction Activities
1	1961 Airport Traffic Control Tower[1]	1 World Way	Steel, reinforced concrete	1961	130 feet
2	Union Savings and Loan Building[2]	9800 S. Sepulveda Boulevard	Steel, reinforced concrete	1964	75 feet
3	Former Aircraft School Building[3]	9700 S. Sepulveda Boulevard	Timber and masonry	1941-1945	45 feet
4	McCulloch Building[4]	6151 W. Century Boulevard	Steel, reinforced concrete	1963	55 feet

Source: **Appendix D** of this EIR.

Notes:

1 Eligible for listing as a City of Los Angeles Historic-Cultural Monument only; not eligible for listing in the National Register of Historic Places or California Register of Historical Resources.

2 Eligible for listing in the California Register of Historical Resources and as a City of Los Angeles Historic-Cultural Monument; not eligible for listing in the National Register of Historic Places.

3 Eligible for listing in the National Register of Historic Places, the California Register of Historical Resources, and as a City of Los Angeles Historic-Cultural Monument.

4 Eligible for listing in the California Register of Historical Resources and as a City of Los Angeles Historic-Cultural Monument. During the environmental review of the LAX Landside Access Modernization Program, FAA determined that the McCulloch Building was ineligible for the National Register. SHPO did not formally concur with this determination. Rather, because the LAX Landside Access Modernization Program would not affect the property, SHPO and FAA agreed to consider it as eligible for purposes of that project.

4.7.3.4 Thresholds of Significance

4.7.3.4.1 Construction Traffic Noise

The proposed Project would result in a significant impact related to construction traffic noise if:

Threshold 4.7.3-1 Ambient noise levels measured at the property line of noise-sensitive uses would increase by 3 dBA or more in CNEL.

This threshold is based on the L.A. CEQA Thresholds Guide's significance thresholds for mobile vehicular sources.[9]

4.7.3.4.2 Construction Equipment Noise

The proposed Project would result in a significant impact related to construction equipment noise if construction activities would:

Threshold 4.7.3-2 Exceed existing ambient exterior noise levels by 5 dBA or more at a noise-sensitive use in association with the following:

- Construction activities lasting more than 10 days in a 3-month period; or

9 City of Los Angeles, *L.A. CEQA Thresholds Guide, Your Resource for Preparing CEQA Analyses in Los Angeles*, 2006. Available: https://planning.lacity.org/odocument/cc8fb2f5-dc6c-47f1-bfc3-864b84621abb/CEQAThresholdsGuide.pdf.

- Construction activities occurring between the hours of 9:00 p.m. and 7:00 a.m. Monday through Friday, before 8:00 a.m. or after 6:00 p.m. on Saturday, or at any time on Sunday.

This threshold is based on the L.A. CEQA Thresholds Guide's significance thresholds for construction noise.[10] It is anticipated that construction of most, if not all, of the improvements associated with the proposed Project would involve construction activities lasting more than ten days in a three month period, and it is likely that Project-related construction may periodically occur within evening/nighttime hours and on weekends; hence, this threshold was utilized for the construction equipment noise impact analysis.

4.7.3.4.3 Construction Equipment Vibration

The proposed Project would result in a significant impact related to vibration if it would result in:

Threshold 4.7.3-3 Generation of excessive ground-borne vibration, defined by vibration that would exceed the following damage criteria:

- Reinforced-concrete, steel, or timber (no plaster) would exceed 0.5 peak particle velocity (PPV) (inches per second);
- Engineered concrete and masonry (no plaster) would exceed 0.3 PPV;
- Non-engineered timber and masonry buildings would exceed 0.2 PPV; or
- Buildings extremely susceptible to vibration damage would exceed 0.12 PPV.

This threshold is based on the FTA's Transit Noise and Vibration Impact Assessment Manual. [11]

4.7.3.5 Project Impacts

This section evaluates the potential for the proposed Project to result in significant noise or vibration impacts due to Project construction. As no Project-related construction would occur during operations, this discussion focuses solely on construction-related impacts.

4.7.3.5.1 Impact 4.7.3-1

Summary Conclusion for Impact 4.7.3-1: Construction traffic would not cause existing ambient noise levels measured at the property line of noise-sensitive uses to increase by 3 dBA or more in CNEL. This would be a *less than significant impact* for construction.

4.7.3.5.1.1 Construction Impacts

The proposed Project would generate construction-related traffic along major roadways and access routes to and from the Project area during the construction period. Construction of the proposed Project would require moving heavy construction equipment throughout the Project area for each specialized construction activity (for example, demolition or grading). Construction-related traffic would consist of construction vehicles, construction equipment, and construction workers' personal vehicles. Proposed haul routes are identified in Figure 2-29 in Chapter 2, *Description of the Proposed Project*. As shown in that figure, the construction haul routes would be located along major roadways and away from residential areas. By using designated haul routes, construction-related vehicles would be restricted to highways and major arterials wherever feasible to minimize use of local roadways.

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[10] City of Los Angeles, *L.A. CEQA Thresholds Guide, Your Resource for Preparing CEQA Analyses in Los Angeles*, 2006. Available: https://planning.lacity.org/odocument/cc8fb2f5-dc6c-47f1-bfc3-864b84621abb/CEQAThresholdsGuide.pdf.

[11] U.S. Department of Transportation, Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual,* September 2018. Available: https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf.

Construction staging areas would be located throughout the Project area, as shown on Figure 2-29, and would include areas for construction worker parking, construction trailers, construction vehicles, and construction equipment storage. Multiple construction staging areas would be used to accommodate different phases and components of the proposed Project.

As described under Section 4.7.3.4.1, Threshold 4.7.3-1 defines a significant construction-related traffic noise impact as an increase in ambient noise levels of 3 dBA or more at the property line of noise-sensitive uses using the CNEL metric.[12] As described in Section 4.7.3.1.1.1, if a sound's physical intensity is doubled, the sound level increases by 3 dBA, regardless of the initial sound level. In order for the proposed Project's construction-related traffic to cause an increase in ambient noise levels of 3 dBA CNEL or more, the daily traffic volumes on the major roadways near noise-sensitive uses would need to double. The major roadways on which construction-related traffic would be routed carry substantial existing vehicular traffic. Traffic volumes along the proposed haul routes are identified in **Table 4.7.3-4**.

Table 4.7.3-4
Existing Traffic Volumes on Proposed Haul Routes

Street	Daily Traffic Volume
Century Boulevard	54,220
98th Street[1]	8,609
96th Street	15,880
Sepulveda Boulevard	49,620
Airport Boulevard	68,060
Westchester Parkway	18,160
Pershing Drive	28,400
Imperial Highway	60,800

Source: **Appendix G** of this EIR; National Data & Surveying Services, *Volume 98th St & Avion Dr*, March 15, 2017, prepared for City of Los Angeles, Department of Transportation. Available: https://navigatela.lacity.org/dot/traffic_data/automatic_counts/98th.Avion.170316-NDSAUTO.pdf.

Note:
[1] Data from NavigateLA.

For peak construction activity anticipated for development of the proposed Project, it is estimated that the peak daily truck trips would be approximately 330 trips and peak daily worker commute trips would be approximately 2,400 trips. In applying a "passenger car equivalent" adjustment factor of 2.5 to all truck trips (i.e., each truck trip is considered to be comparable to 2.5 passenger car trips), the peak daily vehicle trip generation of trucks and workers combined would be 3,225 daily trips. Notwithstanding that total trip generation would be distributed to, and dispersed between, several different streets, total trip generation is well below the existing traffic volumes of any of the streets listed in Table 4.7.3-4. As such, the proposed Project would not result in construction-related traffic that would double the existing daily traffic volumes on any road; hence, the increase in noise levels from construction traffic associated with the proposed Project would be less than 3 dBA CNEL and construction traffic noise impacts would be less than significant.

4.7.3.5.1.2 Mitigation Measures

Because the proposed Project would result in a ***less than significant impact*** relative to construction traffic noise, no mitigation is required.

[12] CNEL is a metric used to express cumulative noise exposure as a single-number description of the sound energy to which a person or community is exposed over a period of 24 hours.

4.7.3.5.1.3 Significance of Impact After Mitigation

As indicated above, no mitigation is required to address construction traffic noise. The proposed Project would result in a ***less than significant impact***.

4.7.3.5.2 Impact 4.7.3-2

Summary Conclusion for Impact 4.7.3-2: Use of construction equipment in association with construction activities would exceed existing ambient exterior noise levels by 5 dBA or more at noise-sensitive uses. This would be a *significant impact* for construction.

4.7.3.5.2.1 Construction Impacts

Construction noise would be generated from Project construction activities for airfield improvements, terminal improvements, and landside (roadway) improvements, as well as from activities at potential staging areas (see Figure 2-29).

Grading and scraping construction activities would be the source of most construction noise associated with the proposed Project. Although not the loudest construction source, grading and scraping would occur across multiple construction activities over a longer period of time than would louder impact devices, such as jackhammers, which would be used for much shorter durations. Construction equipment would generate noise levels as high as 70 dBA L_{eq} to 95 dBA L_{eq} within 50 feet of its operation. As shown in **Table 4.7.3-5** below, there are several noise-sensitive uses at varying distances from the proposed Project improvement sites.

Although construction of the different components of the Project may cause audible noise at several noise-sensitive receptor locations (as identified in Table 4.7.3-5), the noise analysis estimates the potential noise impacts for these receptors based on the closest component of construction. Construction activities located at greater distance from the receptor would result in lower noise levels. This approach is used in order to focus on the construction activity with the greatest potential to result in a significant noise impact at each noise-sensitive receptor location (refer to the Construction Activity column). In addition, the noise analysis assumes that all construction equipment would be utilized at the same time, which is unlikely. Moreover, the analysis also conservatively assumes a potential worst-case scenario whereby construction activity might occur on a continuous basis over the course of an entire (24-hour) day. In fact, actual construction activities would occur on a more limited, partial-day construction schedule, would occur more intermittently, and would not coincide with other construction activities; hence, the actual construction-related noise levels would be lower than those identified in Table 4.7.3-5. It should also be noted that the construction-related noise levels presented in Table 4.7.3-5 do not account for noise reduction/attenuation from any intervening structures. The potential noise impacts from each construction activity on the nearest noise-sensitive receptors are discussed in the following sections, based on information presented in Table 4.7.3-5.

Table 4.7.3-5
Construction Noise Levels at Noise-Sensitive Receptor Sites

ID	Receptor	Background Conditions[1] CNEL (dBA)	Distance from Construction Activity (feet)	Construction Activity	Construction Equipment CNEL (dBA)	Total[2] CNEL (dBA)	Significance Threshold[3]	Above Threshold?
R1	Residential development in Playa del Rey	67.8	3,200	Airfield improvements	60.5	68.5	72.8	No
R2	Saint Bernard High School	67.7	2,500	Airfield improvements	62.6	68.9	72.7	No
R3	Residential development along southern edge of Westchester	68.4	1,500	Airfield improvements	67.1	70.8	73.4	No
R4	Park West Apartments on Lincoln Boulevard	66.3	1,200	Airfield improvements	69.0	70.9	71.3	No
R5	Residential uses along West 88th Street near Liberator Ave	67.9	2,500	Airfield improvements	62.6	69.0	72.9	No
R6	Residential uses near Westchester Parkway and Kittyhawk Ave	72.0	1,750	Airfield improvements	65.7	72.9	77.0	No
		72.0	2,850	Terminal (C0) construction	61.9	72.4	77.0	No
		72.0	1,500	Roadway construction	67.5	73.3	77.0	No
		72.0	NA	Combined airfield improvements, terminal (C0), and roadway construction	70.4	74.3	77.0	No
R7	Residence Inn by Marriott Los Angeles LAX/Century Boulevard	70.2	2,900	Terminal (C0) construction	61.7	70.9	75.2	No
		70.2	900	Terminal (T9) construction	71.9	74.1	75.2	No
		70.2	900	Roadway construction	71.9	74.1	75.2	No
		70.2	NA	Combined terminal (C0 and T9) and roadway construction	75.1	76.3	75.2	Yes[4]
R8	Sheraton Gateway Los Angeles Hotel	69.3	1,600	Terminal (C0) construction	66.9	71.3	74.3	No
		69.3	300	Terminal (T9) construction	81.4	81.7	74.3	Yes[4]
		69.3	100	Roadway construction	91.0	91.0	74.3	Yes[4]
		69.3	NA	Combined terminal (C0 and T9) and roadway construction	91.5	91.5	74.3	Yes[4]
R9	H Hotel Los Angeles/Homewood Suites by Hilton Los Angeles International Airport	70.4	1,200	Terminal (C0) construction	69.4	72.9	75.4	No
		70.4	250	Terminal (T9) construction	83.3	83.3	75.4	Yes[4]
		70.4	55	Roadway construction	96.2	96.2	75.4	Yes[4]

Table 4.7.3-5
Construction Noise Levels at Noise-Sensitive Receptor Sites

ID	Receptor	Background Conditions[1] CNEL (dBA)	Distance from Construction Activity (feet)	Construction Activity	Construction Equipment CNEL (dBA)	Total[2] CNEL (dBA)	Significance Threshold[3]	Above Threshold?
		70.4	NA	Combined terminal (C0 and T9) and roadway construction	96.4	96.4	75.4	Yes[4]
R10	Hyatt Regency Los Angeles International Airport	73.4	350	Terminal (C0) construction	80.1	80.9	78.4	Yes[4]
		73.4	550	Terminal (T9) construction	76.2	78.0	78.4	No
		73.4	150	Roadway construction	87.5	87.7	78.4	Yes[4]
		73.4	NA	Combined terminal (C0 and T9) and roadway construction	88.5	88.6	78.4	Yes[4]
R11	Courtyard Los Angeles LAX/Century Boulevard	71.7	1,000	Terminal (C0) construction	71.0	74.4	76.0	No
		71.7	600	Terminal (T9) construction	75.4	76.9	76.0	Yes[4]
		71.7	150	Roadway construction	87.5	87.6	76.0	Yes[4]
		71.7	NA	Combined terminal (C0 and T9) and roadway construction	87.9	88.0	76.0	Yes[4]

Source: **Appendix F.3** of this EIR.

Notes:
1 Background condition obtained through AEDT using 24-hour CNEL dBA.
2 Background plus Project construction noise.
3 Significance Threshold = Background CNEL + 5 dBA
4 Construction equipment noise levels conservatively assume all equipment would be utilized at the same time and at all hours of the 24-hour day, both of which are unlikely.

Key:
C0 = Concourse 0; T9 = Terminal 9

For receptor locations R6 through R11, the estimated noise levels presented in Table 4.7.3-5 conservatively account for the potential for major elements of the Project that are proposed nearby to be under construction simultaneously. For those receptor locations, Table 4.7.3-5 indicates the estimated construction noise levels associated with the improvements individually and combined. The remaining receptor locations, specifically, R1 through R5, are not located near more than one of the major elements of the proposed Project. The estimated construction noise levels at those locations would be influenced primarily by airfield construction.

Construction of Airfield Improvements

The nearest noise-sensitive receptors to the proposed airfield improvement construction sites are residences located north of Westchester Parkway (R3) and at the Park West Apartments (R4), at distances of approximately 1,500 feet and 1,200 feet from the closest point of construction, respectively. As shown in Table 4.7.3-5, noise exposure at these locations due to construction of the airfield improvements would be approximately 67.1 and 69.0 dBA CNEL, respectively, during the noisiest construction times. Total noise levels (i.e., background plus Project construction noise) would not exceed existing ambient exterior noise levels by 5 dBA or more at any of the receptor locations, even when considering nighttime construction activities, and impacts would be ***less than significant***.

Construction of Terminal Improvements

Construction of the proposed terminal improvements would not be located near noise-sensitive residential receptors. As shown on Table 4.7.3-5, residences located near Westchester Parkway and Kittyhawk Avenue (R6) are approximately 2,850 feet from the closest terminal construction activity (Concourse 0 construction). Construction equipment-related noise exposure at these residences would be approximately 61.9 dBA CNEL at its loudest (see Table 4.7.3-5), which is well below existing ambient noise conditions (72.0 dBA CNEL) and would not result in a total noise level that exceeds the significance threshold. Therefore, at residences located near Westchester Parkway and Kittyhawk Avenue, impacts related to construction-equipment noise from terminal construction activities would be ***less than significant***.

Hotels along and near Century Boulevard would be subject to disturbance by construction of the new Concourse 0 and Terminal 9 due to their proximity to the proposed sites. Construction noise exposure would range from 71.9 dBA CNEL at the Residence Inn by Marriott (R7) to 83.3 dBA CNEL at the H Hotel/Homewood Suites (R9) under worst-case conditions (which assumes all construction equipment is in use over a 24-hour day, and all terminal-related construction activities are occurring at the same time). Total terminal-related noise levels (i.e., background plus Project construction noise) at the Sheraton Gateway Hotel, H Hotel/Homewood Suites, Hyatt Regency, and Courtyard Los Angeles LAX/Century Boulevard would be greater than existing ambient exterior noise levels by 5 dBA or more (see Table 4.7.3-5). Therefore, construction equipment noise from construction of the proposed terminal improvements could result in a temporary but ***significant impact*** to noise-sensitive uses in the nearby area including, but not limited to, the Sheraton Gateway, H Hotel/Homewood Suites, Hyatt Regency, and Courtyard Los Angeles LAX/Century Boulevard, under conservative, worst-case conditions.

It should be noted that the estimated noise levels do not account for any intervening topography, buildings, or other obstructions that would reduce noise. It should also be noted that hotels located in proximity to LAX including, but not limited to, the specific hotels identified above, are subject to the *Sound Insulation Requirements for Noise Sensitive Structures Near Los Angeles International Airport* established

by the City of Los Angeles Department of Building and Safety.[13] The purpose of those requirements is to protect persons within designated noise-sensitive buildings from excessive exterior noise, with the goal to ensure that, after proper sound insulation measures are taken, the interior CNEL does not exceed 45 dBA. Given the existing setting of these hotels, being in proximity to aircraft operations at LAX and the associated high noise levels, the outdoor to indoor noise reduction levels at the hotels is greater than in most typical buildings due to extra sound insulation/attenuation features integrated into the buildings' design and construction. Although exterior noise levels would exceed the significance thresholds, it is not expected that these exceedances would result in sleep disturbance, given the heightened standards for interior noise insulation.

As noted previously, this analysis conservatively assumes construction activity at all sites would occur simultaneously, that all equipment would be used throughout the entire 24-hour day, and that all construction equipment at each site would be in use simultaneously. This is not expected to occur, as different pieces of construction equipment would be in use during different phases of construction, nighttime construction activities, if any, would be limited, and construction of the various Project components would not all overlap. Therefore, this analysis represents a potential worst-case scenario for construction equipment noise. As a result, actual noise exposure at these receptor locations would likely be lower than identified in Table 4.7.3-5.

Construction of Landside Access Improvements

Construction of the proposed landside access (i.e., roadway) improvements would be located approximately 1,500 feet from residences located northeast of the intersection of Sepulveda Boulevard and Westchester Parkway (R6). Construction equipment-related noise exposure at these residences would be approximately 67.5 dBA CNEL at its loudest (see Table 4.7.3-5), which is well below the ambient noise conditions (72.0 dBA CNEL) and would not result in a total noise level that exceeds the significance threshold. Therefore, at residences located northeast of the Sepulveda Boulevard and Westchester Parkway intersection, which represents residential receptors nearest to proposed roadway improvements, impacts related to construction-equipment noise from roadway construction activities would be ***less than significant***.

Hotels along Century Boulevard would be subject to construction equipment-related noise from construction of the proposed roadway improvement construction activities. Construction noise exposure would range from 71.9 dBA CNEL at the Residence Inn by Marriott (R7) to 96.2 dBA CNEL at the H Hotel/Homewood Suites (R9). As shown in Table 4.7.3-5, total noise levels (i.e., background plus roadway construction noise) would be greater than existing ambient exterior noise levels by 5 dBA or more at four of the five hotels analyzed (i.e., Sheraton Gateway, H Hotel/Homewood Suites, Hyatt Regency, and Courtyard Los Angeles LAX/Century Boulevard). Therefore, construction equipment noise from construction of the proposed roadway improvements could result in a temporary but ***significant impact*** to noise-sensitive uses in the nearby area including, but not limited to, at the Sheraton Gateway, H Hotel/Homewood Suites, Hyatt Regency, and Courtyard Los Angeles LAX/Century Boulevard, under conservative, worst-case conditions. Although exterior noise levels would exceed the significance thresholds, for reasons described above, it is not expected that these exceedances would result in sleep disturbance, given the heightened standards for interior noise insulation.

[13] City of Los Angeles, Department of Building and Safety, *Information Bulletin/Public – Building Code, Reference No.: LAMC 91.1207, Document No.: P/BC 2014-074, Sound Insulation Requirements for Noise Sensitive Structures Near Los Angeles International Airport*, Effective January 1, 2014. Available: https://www.ladbs.org/docs/default-source/publications/information-bulletins/building-code/sound-insulation-requirements-for-noise-sensitive-structures-near-los-angeles-international-airportib-p-bc2014-074.pdf?sfvrsn=13.

As noted previously, that actual noise exposure at these receptor locations would likely be lower than the levels analyzed herein because it is unlikely that all equipment would be in use at any one time or that construction activity would occur throughout the entire 24-hour day.

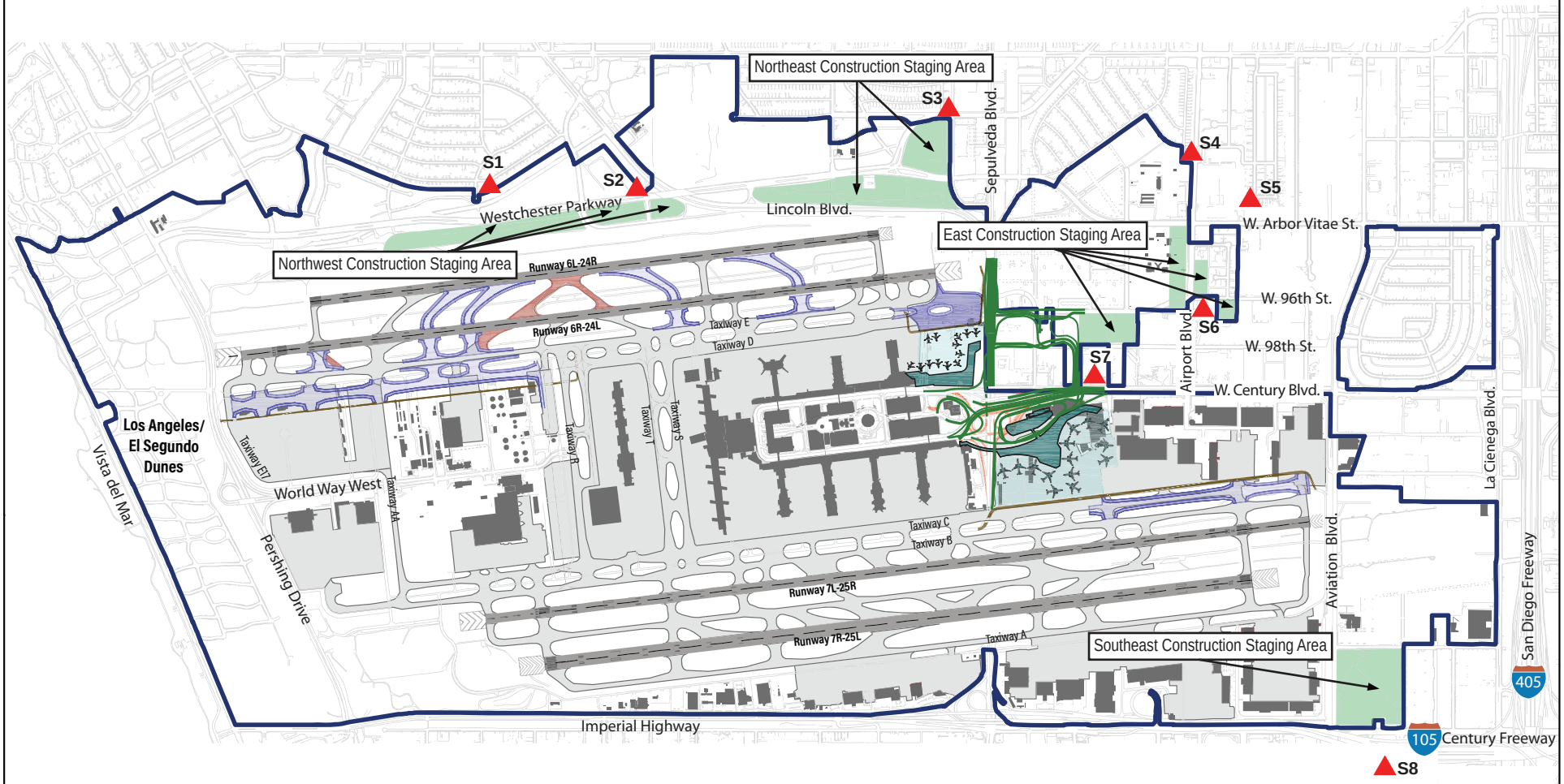
Combined Construction of Project Improvements

The five hotels at receptor locations R7 through R11 are situated in proximity to both the proposed terminal improvements and the landside access improvements and could be subject to construction noise impacts from both types of improvements should the subject construction activities occur simultaneously. Combined construction noise from the proposed airfield improvements, the landside access improvements, and proposed Concourse 0 was also evaluated for receptor location R6. Table 4.7.3-5 presents the estimated noise levels at each receptor location for the combined construction activities. As shown, the combined airfield, landside access, and terminal improvements construction noise exposure would be 70.4 dBA CNEL at Receptor R6, which would be less than existing exterior ambient noise levels (72 dBA). Total noise at this receptor would not exceed existing ambient exterior noise levels by 5 dBA. The combined terminal improvements and landside access improvements construction noise exposure would range from 75.1 dBA CNEL at the Residence Inn by Marriott (R7) to 96.4 dBA CNEL at the H Hotel/Homewood Suites (R9) under worst-case conditions (which assumes all construction equipment is in use over a 24-hour day, and all terminal-related and roadway-related construction activities are occurring at the same time). As shown in Table 4.7.3-5, total noise levels (i.e., background plus terminal and roadway construction noise) would range from 76.3 dBA to 96.4 dBA, and would be greater than existing ambient exterior noise levels by 5 dBA or more at all five hotels analyzed. Therefore, construction equipment noise from potential combined construction of the proposed terminal improvements and the roadway improvements could result in a temporary but ***significant impact*** to noise-sensitive uses in the nearby area including, but not limited to, the Residence Inn by Marriott, Sheraton Gateway, H Hotel/Homewood Suites, Hyatt Regency, and Courtyard Los Angeles LAX/Century Boulevard, under conservative, worst-case conditions. Although exterior noise levels would exceed the significance thresholds, for reasons described above, it is not expected that these exceedances would result in sleep disturbance, given the heightened standards for interior noise insulation.

As noted previously, that actual noise exposure at these receptor locations would likely be lower than the levels analyzed herein because it is unlikely that all equipment would be in use at any one time or that construction activity would occur throughout the entire 24-hour day.

Construction Staging Areas

Various construction staging areas would be utilized to mobilize and manage construction equipment and/or supplies. These construction staging areas are shown in **Figure 4.7.3-2**. It should be noted that these staging areas are currently being, or have been, used as staging areas for other construction projects at LAX. Noise-sensitive receptor locations in the vicinities of the construction staging areas are also shown in Figure 4.7.3-2. **Table 4.7.3-6** identifies the anticipated noise levels at these noise-sensitive uses. The potential noise impacts from use of these construction staging areas are discussed in the following sections.



Legend

- Construction Noise Analysis Receptors
- LAX Property Boundary
- Airfield Improvements
- Terminal and Related Improvements
- Taxiway to be Removed or Decommissioned
- Roadway Improvements
- Roadway to be Demolished
- Potential Construction Staging Area

Note: See Table 4.7.3-1 for description of land use setting at each receptor location.

0 1,500 3,000 Feet
Scale

Source: HMMH, June 2020; CDM Smith, June 2020
Prepared by: CDM Smith, October 2020

LAX Airfield and Terminal Modernization Project

Construction Staging Areas and
Nearby Noise-Sensitive Receptors

Figure
4.7.3-2

Table 4.7.3-6
Staging Area Noise Levels at Noise-Sensitive Receptor Sites

ID	Receptor	Background Conditions[1] CNEL (dBA)	Distance from Staging Area (feet)	Staging Area Construction Equipment Noise CNEL (dBA)	Total[2] CNEL (dBA)	Significance Threshold[3]	Above Threshold?
S1	Residential development along southern edge of Westchester	68.6	700	55.1	68.8	73.6	No
S2	Park West Apartments on Lincoln Boulevard	67.8	200	66.0	70.0	72.8	No
S3	Residential uses along West 88th Street near Sepulveda Westway	68.2	125	70.0	72.2	73.2	No
S4	Residential uses along Lilienthal Avenue near Airport Blvd	71.1	1,350	49.4	71.1	76.1	No
S5	Residential uses north of Arbor Vitae St between Airport Blvd and Bellanca Ave	74.0	850	53.4	74.0	79.0	No
S6	Renaissance Los Angeles Airport Hotel	68.0	150	68.5	71.2	73.1	No
S7	Sheraton Gateway Los Angeles Hotel	69.3	150	68.5	71.9	74.4	No
S8	Residential uses within Del Aire near Aviation Blvd	66.1	750	67.5[4]	69.9	71.1	No

Source: **Appendix F.3** of this EIR.

Notes:

1 Background condition obtained through AEDT using 24-hour CNEL dBA.

2 Background plus Project construction staging area noise.

3 Significant Threshold = Background CNEL + 5 dBA.

4 This noise level is conservative (high) because it assumes concrete batch plant and crusher operations would occur at the south edge of the staging area closest to the nearest residential area; however, the actual placement of those facilities within the staging area would be farther away in the central portion of the staging area where electric power infrastructure for the facilities is located. As such, actual construction noise levels at the nearest residential area would be lower than shown in the table.

Northwest Construction Staging Area

The northwest construction staging area would be located south of Westchester Parkway between Pershing Drive and Lincoln Boulevard (see Figure 4.7.3-2). This area is expected to be used primarily for construction worker parking, construction trailers/portable offices, as well as storage for tools/supplies/materials. Specifically, this construction staging area would generate noise from workers arriving at and departing from the parking area, noise from trucks traveling to and from this area, and noise from on-site activities, such as loading and unloading trucks. No materials processing (e.g., a rock crusher or concrete batch plant) would occur at the construction staging area.

Construction staging activity would occur primarily in the daytime hours and largely involve street-legal vehicles that are quieter than off-road construction equipment. Therefore, the noise from such vehicles at this staging/parking area would be much less than that from the off-road construction equipment

considered for construction of the airfield, terminal, and roadway improvements. Based on the nature, location, and anticipated use of this construction staging area, staging area activity noise levels at nearby residential areas located approximately 200 feet to the north (S2) were calculated to be 66.0 dBA CNEL, and would not result in a total noise level that exceeds the significance threshold. Therefore, impacts to residences related to noise from the northwest construction staging area would be ***less than significant*** (see Table 4.7.3-6).

Northeast Construction Staging Area

The northeast construction staging area would be located northeast of the LAX, with one portion located at the intersection of La Tijera and Sepulveda Westway, and the other portion located to the immediate south between McConnell Avenue and Sepulveda Westway (see Figure 4.7.3-2). Part of staging area has been used by LAWA for staging of construction and soundproofing activities; a block wall approximately 15 to 20 feet tall borders the northern and western edges of the staging area (i.e., between the interior of the staging area and residential areas to the north and northwest). This construction staging area would be used primarily for construction worker parking, construction trailers/portable offices, and/or outdoor storage laydown areas. No materials processing (e.g., a rock crusher or concrete batch plant) would occur at the northeast construction staging area.

Based on the nature, location, and anticipated use of the northeast construction staging area, staging area activity noise levels at nearby residential areas located approximately 125 feet to the north (S3) were calculated to be 70.0 dBA CNEL, and would not result in a total noise level that exceeds the significance threshold. Therefore, impacts to residences related to noise from the northeast construction staging area would be ***less than significant*** (see Table 4.7.3-6).

East Construction Staging Areas

The east construction staging areas would be located to the east of the airport and are expected to be used primarily for construction worker parking, and for construction trailers/portable offices, storage of tools/supplies/materials, and outdoor storage and laydown areas. One area would be located south of Arbor Vitae Street on both sides of Airport Boulevard between Belford Boulevard and Jenny Avenue, and the other would be located south of 96th Street and north of 98th Street near Avion Drive (see Figure 4.7.3-2). No materials processing (e.g., a rock crusher or concrete batch plant) would occur at the east construction staging areas.

Based on the nature, location, and anticipated use of these construction staging areas, staging area activity noise impacts to the closest nearby residential areas located approximately 850 feet to the north (S5) were calculated to be 53.4 dBA CNEL, and would not result in a total noise level that exceeds the significance threshold. In addition, there are several hotel receptors (S6 and S7) located approximately 150 feet from one of the east construction staging areas. The staging area activity noise impacts at these hotels were calculated to be 68.5 dBA CNEL, and would not result in total noise levels that exceeds the significance threshold. Therefore, impacts to residences and hotels related to noise from the east construction staging areas would be ***less than significant*** (see Table 4.7.3-6).

Southeast Construction Staging Area

The southeast construction staging area would be located southeast of the southern runway complex at the corner of Imperial Highway and Aviation Boulevard (see Figure 4.7.3-2). This staging area is expected to be used primarily for construction worker parking and construction trailers/portable offices; enclosed storage bins for contractors to keep tools, supplies, and materials; and outdoor storage and laydown areas. There is a potential for materials processing (e.g., a rock crusher or concrete batch plant) to occur within this staging area.

The nearest noise-sensitive residential use (S8), located in Del Aire, is approximately 750 feet south of the area. The staging area activity noise impacts at this receptor, assuming that materials processing would occur at this site, were calculated to be 67.5 dBA CNEL,[14] and would not result in total noise levels (i.e., 69.9 dBA) that exceeds the significance threshold. Therefore, impacts to residences related to noise from the southeast construction staging area would be ***less than significant*** (see Table 4.7.3-6).

It should be noted that an existing eight-foot concrete block wall is located along the north side of 116th Street that fronts the residential area within Del Aire. With the concrete block wall and the many other structures that exist between the southeast construction staging area and the residential area within Del Aire, including the Metro Green Line Aviation/LAX Station and several on- and off-ramps that extend to and from the elevated I-105 freeway, noise emanating from construction staging activities at this construction staging area would be attenuated. These intervening structures would provide further noise reduction.

4.7.3.5.2.2 Mitigation Measures

As noted above, the proposed Project may generate construction noise that results in significant impacts at noise-sensitive receptors consisting of hotels located along Century Boulevard. These impacts would occur during construction of Concourse 0, Terminal 9, and landside access improvements. Mitigation measures proposed to reduce significant impacts related to construction equipment noise are provided below.

- **MM-CN (ATMP)-1. Construction Noise Control Plans.**

  LAWA shall require construction contractors working on the landside access (i.e., roadway) improvements, the Concourse 0 improvements, and the Terminal 9 improvements, including the Terminal 9 APM station, to develop noise control plans to address construction equipment noise at noise-sensitive receptors where construction noise impacts may be significant. The noise control plans shall be approved by LAWA prior to implementation. The noise control plans shall calculate the total maximum noise level (in CNEL) associated with construction of the Project component, as well as cumulative noise impacts that account for Project-related activities that would occur concurrently with construction of other Project components and construction of other nearby LAX projects. If the calculated construction-related noise levels indicate an increase of 5 dBA over the baseline exterior noise level at any noise-sensitive receptor, the noise control plan shall specify provisions and/or measures to be implemented during construction that will attenuate construction noise levels to be less than 5 dBA over the baseline exterior noise level. Potential noise attenuation measures could include, but are not limited to, noise curtains, noise blankets, temporary sound walls, or their equivalent during construction. The noise control plans shall include a provision that states that, if noise levels exceed the 5 dBA increase, LAWA will require the contractor to implement additional noise attenuation measures until the noise increase is less than 5 dBA.

Due to the dynamic nature of construction activities, especially for a large diverse project such as the proposed Project, it is not feasible to specify in the planning stage exactly what noise attenuation measures would be implemented for each aspect of Project development. Such decisions are feasible when there are more details known about the specific construction equipment to be used; the operational location and setting (i.e., any intervening noise barriers between the equipment area and nearby noise-sensitive uses); the schedule of each individual component of the proposed Project, including which

[14] This noise level is conservative (high) because it assumes concrete batch plant and crusher operations would occur at the south edge of the staging area closest to the nearest residential area; however, the actual placement of those facilities within the staging area would be farther away in the central portion of the staging area where electric power infrastructure for the facilities is located. As such, actual construction noise levels at the nearest residential area would be lower than the estimated value of 69.9.

construction activities would occur concurrently; the schedule for, and duration of, equipment operation; and the nature and location of other nearby construction activity that may overlap with the Project-related construction. Given that such considerations may change over the course of developing the proposed Project improvements, the specification of appropriate construction noise attenuation measures is best determined at the time of construction. With implementation of Mitigation Measure MM-CN (ATMP)-1, the need for construction noise attenuation measures would be determined, and the specific noise measures would be identified in noise control plans specific to each Project component. The proposed mitigation measure provides a performance standard that construction noise levels shall not exceed 5 dBA over the baseline exterior noise level at the time of construction and provides a number of feasible options for attaining this standard. With adherence to this performance standard, this measure would mitigate construction noise impacts.

In addition to MM-CN (ATMP)-1, the following mitigation measures are proposed to further reduce significant impacts related to construction equipment noise.

- **MM-CN (ATMP)-2. Construction Scheduling.**

  The timing and/or sequence of the noisiest on-site construction activities shall avoid noise-sensitive times of the day, as feasible (9:00 p.m. to 7:00 a.m. Monday - Friday; 6:00 p.m. to 8:00 a.m. Saturday; anytime on Sunday or holidays).

- **MM-CN (ATMP)-3. Construction Equipment.**

  Stationary source equipment whose use is flexible with regard to relocation (such as generators and compressors) shall be located at the greatest distance practical from noise-sensitive land uses. “Quiet-design” air compressors and other quieter construction equipment shall be used when feasible and when such technology/equipment is commercially available.

In addition to the measures above, the following mitigation measure would apply to the implementation of all construction-related mitigation measures associated with the proposed Project, including mitigation measures related to construction equipment noise.

- **MM-C (ATMP)-1. Construction Mitigation Oversight.**

  LAWA shall require Airfield and Terminal Modernization Project prime contractors to designate an individual responsible for ensuring implementation of all construction-related mitigation measures and LAWA policies/requirements.

4.7.3.5.2.3 Significance of Impact After Mitigation

With implementation of Mitigation Measures MM-CN (ATMP)-1, MM-CN (ATMP)-2, MM-CN (ATMP)-3, and MM-C (ATMP)-1, significant impacts associated with construction equipment noise impacts would be reduced to a level that is ***less than significant***.

4.7.3.5.3 Impact 4.7.3-3

Summary Conclusion for Impact 4.7.3-3: Implementation of the proposed Project would not generate excessive ground-borne vibration that would exceed damage criteria. This would be a *less than significant impact* for construction.

4.7.3.5.3.1 Construction Impacts

Construction of the proposed Project has the potential to generate vibration. Construction of the proposed Project would not involve pile driving or blasting, which are generally the most severe sources of vibration. However, heavy construction equipment associated with the proposed Project, such as large bulldozers, vibratory rollers (e.g., compactors), and caisson drilling for construction of the elevated roadway, would be used during construction.

Construction vibration is a localized event and is typically only perceptible to a receptor that is close to the vibration source. The vibration-sensitive receptors located in the vicinity of proposed construction activity are the former Aircraft School Building, located along Sepulveda Boulevard approximately 45 feet east of a proposed elevated roadway; the McCulloch Building (currently the H Hotel/Homewood Suites), located on the north side of Century Boulevard approximately 55 feet north of a proposed elevated roadway; the Union Savings and Loan Building, located on Sepulveda Boulevard approximately 75 feet south of a proposed elevated roadway; and the 1961 Airport Traffic Control Tower, located within the Central Terminal Area approximately 130 from proposed roadway improvements.

The evaluation of potential impacts to nearby structures is based on typical vibration levels during construction activities presented in **Table 4.7.3-7**. Vibration levels at 25 feet are based on measured data compiled by the FTA. The table also includes calculated approximate vibration levels at other distances.

Table 4.7.3-7
Vibration Source Levels for Construction Equipment

Equipment	PPV at 40 feet (in/sec)	PPV at 30 feet (in/sec)	PPV at 25 feet (in/sec)	PPV at 20 feet (in/sec)	PPV at 10 feet (in/sec)
Vibratory Roller	0.104	0.160	0.210	0.293	0.830
Large Bulldozer/Hoe Ram	0.044	0.068	0.089	0.124	0.352
Caisson Drilling	0.044	0.068	0.089	0.124	0.352
Loaded Trucks	0.038	0.058	0.076	0.106	0.300
Jackhammer	0.017	0.027	0.035	0.049	0.138
Small Bulldozer	0.001	0.002	0.003	0.004	0.012

Sources: U.S. Department of Transportation, Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual*, September 2018. Available: https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf; CDM Smith, 2020.

Key:
PPV = peak particle velocity; in/sec = inches per second

Of the four buildings within the Project area that may be susceptible to vibration damage, the former Aircraft School Building is of timber and masonry construction (with a vibration threshold of 0.2 ppv in/sec), while the others are constructed with reinforced concrete and steel (vibration threshold of 0.5 ppv in/sec). As noted above, in addition to being the building most sensitive to vibration, the former Aircraft School Building is also located closest to the proposed construction activities, at 45 feet. Notwithstanding, as shown in Table 4.7.3-7, vibration levels generated during construction would not the exceed 0.2 ppv in/sec threshold value beyond 40 feet from the source. (At a distance of 40 feet from the source, vibration levels would not even exceed the 0.12 ppv in/sec threshold associated with fragile buildings.) Therefore, the proposed Project would not result in significant vibration impacts during construction.

4.7.3.5.3.2 Mitigation Measures

Because the proposed Project would result in a ***less than significant impact*** relative to construction equipment vibration, no mitigation is required.

4.7.3.5.3.3 Significance of Impact After Mitigation

As indicated above, no mitigation is required to address construction equipment vibration. The proposed Project would result in a ***less than significant impact***.

4.7.3.6 Cumulative Impacts

4.7.3.6.1 Construction Traffic Noise

The geographical area of the cumulative impacts analysis includes the proposed haul routes that are located in proximity to noise-sensitive receptors. Table 3-1 in Chapter 3, *Overview of Project Setting*, identifies development projects at or adjacent to LAX. These projects are shown in Figure 3-1. Of the projects identified on Table 3-1, those whose construction traffic would be most likely to use the same roads as the proposed Project due to their location include the LAX Northside Development, Terminals 2 and 3 Modernization Project, and the LAX Landside Access Modernization Program. Although the cumulative development projects would employ construction traffic management techniques, such as designating construction routes along arterials and away from local streets, the combination of these cumulative projects and the proposed Project would result in increased construction-related traffic on roadways within the Project area. These cumulative trips would add to construction traffic-related noise at nearby noise-sensitive receptors. However, the cumulative increase in construction-related traffic would not result in a doubling of existing daily traffic volumes on any area roads. As noted earlier in Section 4.7.3.5.1.1, construction traffic routes would be located along major roadways such as those listed in Table 4.7.3-4. Major roadways with the most notable potential for having cumulative construction traffic from other development projects at or adjacent to LAX that would combine with construction traffic from the proposed Project include Westchester Parkway relative to LAX Northside Development, Sepulveda Boulevard and Century Boulevard relative to Terminals 2 and 3 Modernization Project and the LAX Landside Access Modernization Program, and 96th Street relative to the LAX Landside Access Modernization Program. As indicated in Table 4.7.3-4, existing daily traffic volumes on those roads range from 15,880 vehicles on 96th Street to 54,220 vehicles on Century Boulevard. As described in Section 4.7.3.5.1.1, the combined peak daily vehicle trip generation of Project-related construction workers and trucks (multiplied time 2.5 for "passenger car equivalent" traffic volumes) is 3,225 daily trips. Even with a very conservative assumption that those trips would not be distributed onto different roadways, it is not anticipated that additional construction traffic from the aforementioned cumulative projects would result in a doubling of traffic on the subject construction traffic routes. Therefore, the increase in noise levels from cumulative construction-related traffic would not exceed 3 dBA CNEL and cumulative construction traffic noise impacts would be ***less than significant***.

4.7.3.6.2 Construction Equipment Noise

Cumulative noise impacts could occur at noise-sensitive receptor locations if construction of other development projects were to occur concurrently with Project construction. Because noise levels decrease with distance, only those development projects that are located in close proximity to the proposed Project were included in the analysis of cumulative construction equipment noise. Specifically, only those projects located in close proximity to the proposed landside access improvements would have the potential to contribute to cumulative construction equipment noise impacts. (The proposed airfield and terminal improvements are not located in close enough proximity to other development projects to result in cumulative construction equipment noise impacts.) Therefore, the geographical area of the cumulative impacts analysis for construction noise includes the proposed Project landside access (i.e., roadway) construction sites and adjacent areas.

As noted in the discussion of cumulative construction traffic noise above, development projects at or adjacent to LAX are summarized in Table 3-1 and shown in Figure 3-1. Based on project location and construction timing, the LAX Landside Access Modernization Program is the only development project with the potential to contribute to cumulative construction noise impacts. The remaining development projects in Table 3-1 are located too far from noise-sensitive receptor locations and/or from construction

activities associated with the proposed Project for additive elevated noise levels to occur at the receptor locations.

The LAX Landside Access Modernization Program components that are located in proximity to the proposed Project's landside access improvements include portions of the Automated People Mover (APM), development of Jetway Boulevard (which will be constructed between Vicksburg Avenue and Avion Drive, and from Century Boulevard north past 96th Street), and improvements to Century Boulevard. Construction of nearby portions of the APM and development of Jetway Boulevard would not overlap with construction of the proposed Project's landside access improvements. However, the LAX Landside Access Modernization Program improvements to Century Boulevard between Vicksburg Avenue and Avion Drive may occur during the same timeframe as the proposed Project's roadway improvements (specifically, the proposed new roadways that would be located parallel to, and immediately west of, Jetway Boulevard and the proposed improvements to Century Boulevard west of Jetway Boulevard).

The nearest noise-sensitive receptors common to the proposed Project's roadway improvements and the LAX Landside Access Modernization Program's improvements to Century Boulevard are the hotels located on the north side of Century Boulevard between Sepulveda Boulevard and Avion Drive, namely the H Hotel/Homewood Suites and the Sheraton Gateway.

In order to determine cumulative construction equipment noise impacts, construction equipment noise associated with the proposed Project improvements whose construction may overlap with the LAX Landside Access Modernization Program were calculated.[15] In addition, construction noise levels for the LAX Landside Access Modernization Program were also calculated based on distances provided in the LAX Landside Access Modernization Program EIR.[16] The results are provided in **Table 4.7.3-8**. As shown in Table 4.7.3-8, cumulative construction equipment noise levels from the proposed Project and the LAX Landside Access Modernization Program would be greater than 5 dBA higher than existing ambient noise levels at the Sheraton Gateway hotel and the H Hotel/Homewood Suites. Therefore, the proposed Project, in conjunction with other development projects, could have a ***significant cumulative impact*** with respect to construction equipment noise. Because the proposed Project, by itself, would have significant impacts at these locations, the Project's contribution to the significant cumulative impact would be ***cumulatively considerable***.

Mitigation Measure MM-CN (ATMP)-1, Construction Noise Control Plan, includes a provision whereby calculation of construction-related noise, as the basis for assessing the need for construction noise attenuation, shall take into account Project-related activities that would occur concurrently with construction of nearby LAX Landside Access Modernization Program facilities. This would address construction noise impacts. When implemented jointly, Mitigation Measures MM-CN (ATMP)-1, MM-CN (ATMP)-2, and MM-CN (ATMP)-3 would reduce cumulative impacts associated with construction equipment noise to a level that is ***less than significant***.

[15] The construction equipment noise levels associated with the proposed Project improvements whose construction may overlap with the LAX Landside Access Modernization Program are not the same as the noise levels shown in Table 4.7.3-5. The noise levels in Table 4.7.3-5 reflect noise from the proposed Project improvement located in closest proximity to the noise-sensitive receptor. The proposed Project improvements whose construction may overlap with the LAX Landside Access Modernization Program are located farther away from the noise-sensitive receptors.

[16] City of Los Angeles, Los Angeles World Airports, *Final Environmental Impact Report for Los Angeles International Airport (LAX) Landside Access Modernization Program*, (SCH 2015021014), Section 4.9 – Noise, February 2017. Available: https://www.lawa.org/en/connectinglax/automated-people-mover/documents.

Table 4.7.3-8
Cumulative Construction Equipment Noise Impacts

Receptor	Proposed Project CNEL (dBA)	LAX Landside Access Modernization Program CNEL (dBA)	Total Cumulative CNEL (dBA)	Significance Threshold	Above Threshold?
Sheraton Gateway Los Angeles Hotel	85	78	85.8	74.3	Yes[1]
H Hotel Los Angeles/Homewood Suites by Hilton Los Angeles International Airport	96.2	81.9	96.4	75.4	Yes[1]
Hyatt Regency Los Angeles International Airport	87.5	70.4	87.6	78.4	Yes[1]

Source: CDM Smith, 2020.

Note:

[1] Construction equipment noise levels assume all equipment would be utilized at the same time and at all hours of the 24-hour day, both of which are unlikely.

4.7.3.6.3 Construction Vibration

The geographic scope of construction vibrational impacts is very limited, given the rate of vibrational attenuation. The vibration-sensitive receptor that is located in proximity to both the proposed Project and the LAX Landside Access Modernization Program is the McCullough Building (currently the H Hotel/Homewood Suites). This receptor is constructed of steel and reinforced concrete; the threshold of significance for construction equipment vibration at buildings of this construction type is 0.5 ppv.

The McCullough Building is located approximately 55 feet from the nearest construction activity associated with the proposed Project and is located approximately 80 feet from the nearest construction activity associated with the LAX Landside Access Modernization Program. As shown in Table 4.7.3-7, even for the most intensive vibration activity (expected to be vibratory rollers or similar equipment), the highest vibration levels would be 0.104 in/sec at 40 feet or one-fifth of the level of significance. Given the distances to the proposed Project and LAX Landside Access Modernization Program construction activities (i.e., 55 feet and 80 feet, respectively), cumulative construction vibration impacts would not exceed the significance threshold of 0.5 in/sec at this receptor. As a result, cumulative construction vibration impacts would be ***less than significant***.

4.7.3.7 Summary of Impact Determinations

Table 4.7.3-9 summarizes the impact determinations of the proposed Project related to construction traffic and equipment noise and vibration, as described above in Sections 4.7.3.5 and 4.7.3.6. Impact determinations are based on the significance criteria presented in Section 4.7.3.4, and the information and data sources cited throughout Section 4.7.3.

Table 4.7.3-9
Summary of Impacts and Mitigation Measures Associated with the Proposed Project Related to Construction Noise

Environmental Impacts	Impact Determination	Mitigation Measures	Level of Significance After Mitigation
Impact 4.7.3-1: Construction traffic would not cause existing ambient noise levels measured at the property line of noise-sensitive uses to increase by 3 dBA or more in CNEL. This would result in a ***less than significant impact*** for construction.	Construction: Less than Significant Operations: Not Applicable	Construction: No mitigation is required Operations: Not Applicable	Construction: Less than Significant Operations: Not Applicable
Impact 4.7.3-2: Use of construction equipment in association with construction activities would exceed existing ambient exterior noise levels by 5 dBA or more at noise-sensitive uses. This would be a ***significant impact*** for construction**.**	Construction: Significant Operations: Not Applicable	Construction: MM-CN (ATMP)-1. Construction Noise Control Plan. MM-CN (ATMP)-2. Construction Scheduling. MM-CN (ATMP)-3. Construction Equipment. MM-C (ATMP)-1. Construction Mitigation Oversight. Operations: Not Applicable	Construction: Less than Significant Operations: Not Applicable
Impact 4.7.3-3: Implementation of the proposed Project would not generate excessive ground-borne vibration that would exceed damage criteria. This would be a ***less than significant impact*** for construction**.**	Construction: Less than Significant Operations: Not Applicable	Construction: No mitigation is required Operations: Not Applicable	Construction: Less than Significant Operations: Not Applicable
Cumulative Impact: With respect to construction equipment noise, implementation of the proposed Project, in conjunction with other development projects, would result in a ***significant cumulative impact*** for construction. The proposed Project's contribution to this significant cumulative impact would be ***cumulatively considerable***. Cumulative construction traffic noise and construction vibration impacts would be ***less than significant***.	Construction: Cumulatively Significant Operations: Not Applicable	Construction: MM-CN (ATMP)-1. Construction Noise Control Plan. MM-CN (ATMP)-2. Construction Scheduling. MM-CN (ATMP)-3. Construction Equipment. Operations: Not Applicable	Construction: Less than Significant Operations: Not Applicable

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4.8 Transportation

4.8.1 Introduction

On September 27, 2013, Governor Jerry Brown signed Senate Bill (SB) 743[1] into law and started a process that fundamentally altered transportation impact analysis conducted as part of CEQA compliance. The Governor's Office of Planning and Research (OPR) was charged with developing new guidelines for evaluating transportation impacts under CEQA using methods that no longer focus on measuring automobile delay and level of service (LOS). This change at the state level recognizes the unintended consequences of using LOS as an impact metric, which discouraged more sustainable infill projects and alternative transportation projects. In other words, the application of LOS as a measurement of traffic congestion inadvertently suggests that development of new projects in greenfield areas that do not have much, if any, existing traffic is more desirable (i.e., would not result in, or exacerbate existing, traffic congestion) than infill development in areas with existing traffic congestion, despite the fact that infill development has other complementary uses (e.g., mixed-use development) located nearby and/or has more opportunity to access public transit and other alternative modes of transportation which, in turn, can reduce both the number of vehicle trips generated and the length of those trips. SB 743 directed agencies to develop new guidelines that develop a transportation performance metric that can help promote the reduction of greenhouse gas (GHG) emissions, the development of multimodal networks, and a more sustainable diversity of land uses.

The State Natural Resources Agency certified the changes to State CEQA Guidelines Section 15064.3 to implement SB 743 effective December 28, 2018, and the updated State CEQA Guidelines were published in January 2019. OPR issued a supporting technical advisory in December 2018.[2] The updates establish vehicle miles traveled (VMT) as the primary metric for evaluating a project's environmental impacts on the transportation system. Lead agencies had until July 2020 to implement these new requirements.

The City of Los Angeles embarked on a parallel process to revise its significance thresholds for transportation impacts to be based on VMT, and to revise its transportation impact assessment processes and guidelines accordingly. In July 2019, the City formally adopted the Los Angeles Department of Transportation (LADOT) Transportation Assessment Guidelines (TAG),[3] which provide new transportation significance thresholds and transportation impact analysis guidance that focus on traditional residential, office, and retail developments. The LADOT TAG provides guidance for transportation projects that:

- Conflict with programs, plans, ordinances, or policies
- Cause substantial VMT
- Induce substantial additional automobile travel
- Substantially increase hazards due to a geometric design feature or incompatible use

However, the TAG Guidance recognizes that "some projects will not fit into the above categories [i.e. residential, office, and retail]. In such cases, with the concurrence of LADOT, a customized approach can be used…" The transportation analysis for the proposed Project was prepared in consultation with LADOT.

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1 Senate Bill 743, *Environmental Quality: Transit Oriented Infill Projects, Judicial Review Streamlining for Environmental Leadership Development Projects, and Entertainment and Sports Center in the City of Sacramento*, approved September 27, 2013. Available: http://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201320140SB743.

2 State of California, Governor's Office of Planning and Research, *Technical Advisory on Evaluating Transportation Impacts in CEQA*, December 2018. Available: http://www.opr.ca.gov/docs/20190122-743_Technical_Advisory.pdf.

3 City of Los Angeles, Department of Transportation, *Los Angeles Department of Transportation (LADOT) Transportation Assessment Guidelines*, July 2019. Available: http://ladot.lacity.org/sites/default/files/documents/ta_guidelines_-20190731_0.pdf.

This analysis takes into consideration certain facilities and factors that relate to the transportation characteristics of the proposed Project, as well as the overall airport. They include the ground transportation system improvements approved and currently under construction for the LAX Landside Access Modernization Program, such as the Automated People Mover (APM) system, consolidated rental car (CONRAC) facility, and Intermodal Transportation Facility (ITF) East and ITF West, as well as off-airport LAX employee and passenger parking facilities and off-airport cargo operations, which are accounted for in the setting of the transportation analysis.

Prior to the preparation of this EIR, an Initial Study (included as **Appendix A** of this EIR) was prepared using the CEQA Environmental Checklist Form to assess potential environmental impacts related to transportation. The Initial Study found that the proposed Project would result in a "Less Than Significant Impact" to emergency access and, thus, no further analysis of this topic in an EIR was required. Based on the Initial Study screening criteria related to transportation, the following potential impact does not require any additional analysis in this EIR:

- The potential for the proposed Project to result in inadequate emergency access was evaluated in the Initial Study. As described therein, the proposed Project would require modifications to the existing circulation system. Temporary lane closures at and near the Central Terminal Area (CTA) entrance may be required to facilitate some construction activities. LAWA's Design and Construction Handbook[4] specifies that a Logistic Plan and fully documented Logistical Work Plan Checklist be developed for construction projects. Required information includes, but is not limited to, identification of emergency access provisions, emergency evacuation routes, and 24-hour emergency contact information. Further, LAWA would coordinate with the Los Angeles Fire Department and LAWA Police Division regarding emergency access and other design needs to ensure that emergency service levels are maintained during construction. In accordance with standard LAWA practice, emergency access routes in the vicinity of the Project site would be kept clear and unobstructed at all times during both construction and operation of the proposed Project in accordance with Federal Aviation Administration (FAA), State Fire Marshal, and Los Angeles Fire Code regulations. In addition, LAWA uses Intelligent Transportation Systems (ITS), including changeable message signs, to notify drivers of construction-related activities and roadway conditions in and around the CTA, which improves traffic flows at LAX. Any work and work zone setups would comply with all applicable permitting requirements including, but not limited to, California Department of Transportation (Caltrans), City of Los Angeles Public Works and Department of Transportation and the requirements set forth in the California Manual of Uniform Traffic Control Devices (MUTCD). As part of these requirements, there are provisions for coordination with local emergency services, training for flagmen for emergency vehicles traveling through the work zone, temporary lane separators that have sloping sides to facilitate crossover by emergency vehicles, and vehicle storage and staging areas for emergency vehicles. MUTCD requirements also provide for construction work during off-peak hours and flaggers. Therefore, the proposed Project would not result in inadequate emergency access and impacts to emergency access would be less than significant; no further evaluation in this EIR is required.

[4] City of Los Angeles, Los Angeles World Airports, *2017 Design and Construction Handbook,* specifically LAWA Construction Safety Program Requirements, Revision 4: July 1, 2016. Available: https://www.lawa.org/-/media/lawa-web/tenants411/file/lawa-construction-safety-program-requirements-rev-4.ashx. Note: subsequent to completion of the Initial Study in April 2019, LAWA updated their Design and Construction Handbook which similarly includes requirements for maintaining emergency access during construction: City of Los Angeles, Los Angeles World Airports, *2020 Design and Construction Handbook (DCH), Version 1.0,* June 30, 2020. Available: https://www.lawa.org/en/lawa-businesses/lawa-documents-and-guidelines/lawa-design-and-construction-handbook.

4.8.1.1 Scenarios Evaluated in the Analysis

The following scenarios were analyzed in the proposed Project transportation study:

- 2019 (i.e., existing traffic conditions without the proposed Project)
- Projected Future Conditions Baseline (2028) (i.e., future conditions with projected growth in background vehicle trips in the area surrounding LAX and anticipated ground transportation system improvements, including Phase 1 of the LAX Landside Access Modernization Program, but without the proposed Project)
- Projected Future Conditions Baseline (2028) With Project (i.e., the future conditions described above plus the proposed Project)

Section 15125(a)(1) of the State CEQA Guidelines provides that "a lead agency may define existing conditions by referencing…conditions expected when the project becomes operational." As discussed in Section 2.6.1, the project would become operational in 2028. Similarly, Section 15125(a)(2) of the State CEQA Guidelines provides that a lead agency "may use projected future conditions… as the sole baseline for analysis … if it demonstrates with substantial evidence that use of existing conditions would be either misleading or without informative value to decision-makers and the public. Use of projected future conditions as the only baseline must be supported by reliable projections based on substantial evidence in the record." For the reasons outlined in the Analytical Framework discussion at the beginning of Chapter 4, *Environmental Impact Analysis*, of this EIR and as explained below, the Projected Future Conditions Baseline (2028) is used as the baseline for the transportation impact analysis.

4.8.2 Methodology

This section describes the methodologies used to evaluate the impacts associated with each of the TAG transportation impact issue areas. The discussion of the VMT methodology includes a description of the Project Travel Demand Model and methodology for determining trip generation.

4.8.2.1 Methodology for Assessing Conflicts with Programs, Plans, Ordinances, or Policies

The LADOT TAG indicates that a proposed project should be analyzed for conflicts with transportation-related programs, plans, ordinances, or policies, subject to certain screening criteria. The TAG provides a methodology for such an analysis. Relative to conducting the analysis, the TAG states: "a project would not be shown to result in an impact merely based on whether a project would not implement a particular program, plan, policy, or ordinance." The relevant inquiry, rather, is whether the project would conflict with adopted programs, plans, ordinances, or policies addressing the circulation system, including transit, roadways, bicycle, and pedestrian facilities and result in a physical environmental impact not already disclosed in the other analyses. This evaluation was conducted by reviewing City documents, including the City of Los Angeles Mobility Plan 2035,[5] the LAX Plan,[6] the land

[5] City of Los Angeles, Department of City Planning, *Mobility Plan 2035 - An Element of the General Plan*, amended September 7, 2016. Available: https://planning.lacity.org/odocument/523f2a95-9d72-41d7-aba5-1972f84c1d36/Mobility_Plan_2035.pdf.

[6] City of Los Angeles, Department of City Planning, *Los Angeles International Airport - LAX Plan*, adopted December 14, 2004, last amended June 7, 2017. Available: https://www.lawa.org/-/media/lawa-web/lawa-our-lax/plan-and-ordiance/2017-lax-plan.ashx?la=en&hash=A56B9B036C9CC63428A4AC5DC0E910992C1B0F53.

use element of the City's General Plan, the Vision Zero plan,[7] the Century Boulevard Streetscape Plan,[8] and relevant municipal code sections. Descriptions of these plans are provided in Section 4.8.3.1.3.

4.8.2.2 Methodology for Assessing Project VMT

4.8.2.2.1 Project Travel Demand Model

The purpose of this section is to introduce and describe the development process of the travel demand model built for the proposed Project. The following explains the model development process in general, including detail on the base year model development, the sources of data used to develop key model inputs, and model calibration/validation. The travel demand model provides VMT forecasts and traffic volume data for the proposed Project.

A key requirement in estimating VMT is a travel model that is sensitive to changes in the built environment. As such, a Project-specific travel demand model was developed and used as the primary tool for the LAX Airfield and Terminal Modernization Project transportation analysis. This model is capable of estimating VMT for the different proposed Project components, such as Concourse 0, Terminal 9, and the proposed changes to the roadway system. The main purpose of the model is to provide information on the following metrics:

- Vehicle Miles Traveled (VMT)
- Induced Demand (trips and VMT)
- Impacts of Mode Split Changes

Model Development and Framework

The base framework for the travel forecasting is the City of Los Angeles Citywide Model (owned and maintained by LADOT), which itself is based on the Southern California Association of Governments (SCAG) 2016 Regional Transportation Plan (RTP) model. This model was used as the starting point for the LAX Airfield and Terminal Modernization Project Travel Demand Model (Project Travel Demand Model) that was used to analyze the proposed Project and alternatives. The Project Travel Demand Model produces a.m. and p.m. peak period, mid-day, and night off-peak period vehicle and transit flows on roadways based on comprehensive socioeconomic data. The model uses a conventional four-step process consisting of trip generation, trip distribution, mode split, and assignment. Further detail regarding the SCAG 2016 RTP model can be obtained from the 2012 SCAG Model Validation Report for the SCAG Planning Model,[9] and additional detail regarding the City of Los Angeles Travel Demand Forecast (TDF) Model can be obtained in the City of Los Angeles Model Development Report.[10] The central purpose of the Project Travel Demand Model is to provide a robust tool to calculate VMT and assess impacts against a threshold of significance.

To develop the 2019 base Project Travel Demand Model to evaluate the proposed Project, the City of Los Angeles Travel Model was utilized with the following refinements incorporated into the model (Note: All data related to existing conditions were collected in 2019):

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7 City of Los Angeles, Department of Transportation, *Vision Zero Los Angeles 2015-2025 Action Plan*, January 2017. Available: https://ladotlivablestreets-cms.org/uploads/cb1ecdfacabb4bcd97c922382b165e79.pdf; City of Los Angeles, Department of Transportation, *Vision Zero Los Angeles 2015-2025: 2018 Action Plan + Progress Report*. Available: https://ladotlivablestreets-cms.org/uploads/d704aa3913e440d5ab4cb91930e902d4.pdf.

8 City of Los Angeles, *Century Boulevard Streetscape Plan*, May 21, 2018. Available: https://planning.lacity.org/plans-policies/overlays/century-boulevard.

9 Southern California Association of Governments, *SCAG Regional Travel Demand Model and 2012 Model Validation*, March 2016. Available: http://www.scag.ca.gov/Documents/SCAG_RTDM_2012ModelValidation.pdf.

10 Fehr & Peers, *2016 City of Los Angeles Model Development Report*, February 2018. Available: https://ladot.lacity.org/sites/default/files/documents/tdf_model_development_report_20180226.pdf.

- The Socio-Economic and Demographic (SED) information for year 2019 was based on the 2019 data provided by SCAG.
- The Traffic Analysis Zones (TAZs) around the airport were further disaggregated to help with vehicle trip distribution and assignment.
- The roadway network was modified. More roadway detail was added in and around the airport to ensure the model produced traffic forecasts that reasonably resembled observed traffic counts.
- The Project Travel Demand Model includes an extensive transit network of routes and stops, which was used to help determine the number of person trips using various modes of transit in the model. All transit routes in the City of Los Angeles were included, along with stops along the routes. The resulting transit network consists of approximately 1,100 transit routes and 18,000 transit stops, representing nearly 40 percent of the transit facilities in the SCAG region.
- There are 40 special generator zones (such as airports and seaports) in the Project Travel Demand Model. There is a total of 12 airport zones and 28 seaport zones in the model, which is consistent with the 2016 SCAG RTP model. All special generators have pre-defined vehicle trip generation and distribution estimates based on information provided by SCAG and LAWA.
- LAX comprises 24 special generator zones, including the CTA, various cargo facilities, passenger on-site airport structure parking, passenger off-site parking, employee parking, and airport administration buildings.
- Extensive 24-hour driveway traffic counts, arterial traffic counts, anonymized employee zip code data, LAX employee and passenger survey data, and "Big Data" (or cellular probe data[11]) were collected in 2019 to develop detailed trip generation and trip distribution estimates for LAX-related zones. Two different sources of "Big Data "were used in the analysis: Teralytics and Streetlight. Data provider Teralytics provided information on the origin destination patterns of both passengers and employees; Streetlight provided data that was used to help with vehicle routing to/from and around LAX. The "Big Data," coupled with the empirical counts, were used to estimate both LAX passenger and employee vehicle trips and subsequent VMT.

Model Calibration and Validation

The original City of Los Angeles Travel Demand Model was tested for accuracy and sensitivity based on the latest California modeling guidance specified in the 2017 California Regional Transportation Plan guidelines.[12] Forecasting models are typically calibrated by adjusting model parameters until model-estimated traffic volumes closely match observed traffic volume counts. For the Project Travel Demand Model, both cell phone and mobile device Global Positioning System (GPS) data (commonly referred to as "Big Data") were used extensively during the calibration and validation process. This approach resulted in a tool that provides a more accurate estimate of VMT.

Model validation is a critical component of the model development process where the model's ability to replicate actual existing conditions is measured. A rigorous approach to validation involves performing both static and dynamic tests, which are further described below.

[11] In the context of transportation planning, "big data" refers to the use of aggregated mobile phone signal data to provide information about human mobility. Anonymized cell phone probe data was provided by Teralytics and Streetlight, who meet all national and international privacy and security standards. Detailed information about these data sources is provided at https://www.teralytics.net/about/ and https://insight.streetlightdata.com/.

[12] State of California, California Transportation Commission, *2017 Regional Transportation Guidelines for Metropolitan Planning Organizations*, January 18, 2017. Available: https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/f0009312-2017rtpguidelinesformpos-a11y.pdf.

Model Static Validation

The verification of the model estimates matching counts is called (static) validation. In this case the resulting modeled link volumes were compared to traffic counts on the roadway network. In addition to the 348 ground traffic counts observed in August 2019 around the LAX area, 2019 traffic counts from Regional Integration of Intelligent Transportation Systems (RIITS) and Freeway Performance Measurement System (PeMS) were used for model validation. More details about the static validation tests are presented in **Appendix G.6**, *LAX Travel Demand Model*.

Model Dynamic Validation

The static validation tests ensure the model can replicate existing traffic counts and speeds. Although these tests are useful to confirm the model can replicate existing conditions, models are generally used to forecast change. To determine how well the model responds to changes in land use and the transportation network, a set of dynamic validation tests was performed. Dynamic tests included isolated tests of changes in the land use or roadway network.

Based on the results of the dynamic validation tests, elements of the trip generation, trip distribution, and traffic assignment modules were adjusted. More details about dynamic validation test are presented in **Appendix G.6**, *LAX Travel Demand Model*.

Projected Future Conditions Baseline (2028) Model

As noted in the Analytical Framework discussion at the beginning of Chapter 4, the surface transportation characteristics around LAX will be substantially changed by the improvements associated with Phase 1 of the LAX Landside Access Modernization Program. Those improvements include the APM, the ITFs, CONRAC, and Phase 1 roadways, all of which will be completed and operational prior to completion of the proposed Project in 2028. In addition, Metro's Airport Metro Connector (AMC) 96th Street Transit Station will also be completed by 2028. The changes to the existing (2019) surface transportation characteristics around LAX that result from these improvements will, in turn, change the existing VMT characteristics of LAX. In order to evaluate potential impacts to VMT associated with implementation of the proposed Project, this analysis uses a Projected Future Conditions Baseline (2028) that includes the improvements in Phase 1 of the LAX Landside Access Modernization Program as the baseline against which Project impacts are measured. The use of the Projected Future Conditions Baseline (2028) provides the only truly representative and accurate disclosure of Project-related VMT impacts. Using an Existing (2019) Conditions Baseline would be misleading as it would confound the ability to distinguish VMT changes in 2028 that are due to the proposed Project from the VMT changes in 2028 that are due to Phase 1 of the LAX Landside Access Modernization Program. As such, the model developed for the transportation analysis of the proposed Project included a scenario for 2028 conditions with Phase 1 of the LAX Landside Access Modernization Program, but without the roadway systems improvements associated with the proposed Project.

For modeling future conditions as related to the Projected Future Conditions Baseline (i.e., future without Project), the 2028 future year Project Travel Demand Model was created with updated model SED and roadway network improvements that accounted for estimated future growth and changes in traffic conditions. SED in year 2028 was interpolated based on the 2016 and 2040 City of Los Angeles TDF Model. Cumulative project information and land use growth in the corresponding TAZs were checked against future year model SED and vehicle trip growth was increased as necessary to ensure the model accounted for the likely increase in traffic from the cumulative projects. SED within the TAZs that were created for LAX were further reviewed to represent the future With Project and Without Project conditions. The 2028 future without Project transportation network was updated based on the 2040 City of Los Angeles TDF Model network.

4.8.2.2.2 Trip Generation Methodology

The following is a synopsis of the methodology used to develop the passenger- and employee-generated trips, which are inputs for the Travel Demand Model.

Existing Conditions (2019) Trip Generation

The CTA trip generation for existing conditions was developed using data and information from the Traffic and Automated Vehicle Identification System (TRAVIS), in-pavement loop detector counters, Transportation Networking Company (TNC) volume reports, and parking entries/exits from the airport's parking and revenue control system. The loop detector data provide hourly 24-hour counts of vehicles accessing the CTA from each approach. The TRAVIS data and TNC volumes provide hourly volumes for all commercial modes. These data sets were reviewed and used to represent a 2019 Design Day hourly vehicle volumes entering and exiting both the arrivals (lower) and departures (upper) levels of the CTA.[13] In order to provide a conservative basis for estimating daily trip generation, the Design Day was selected to be a Friday in August, which represents a busy day during the peak month based on LAWA's monthly passenger statistics and, thus, more passenger VMT. The hourly trip volumes for the existing conditions Design Day (a Friday in August 2019) are provided in **Appendix G.4**, *Trip Generation*.

Projected Future Conditions Baseline (2028) Trip Generation

To develop the future airport passenger generated vehicle volumes, the analysis used the most recently created trip generation model calibrated to data reflecting existing (2019) conditions.[14] The trip generation model uses vehicle classification, occupancies, mode splits, and mode assignments to convert hourly passenger data from the Design Day flight schedule to hourly vehicle volumes on the curbside.

To estimate the Projected Future Conditions Baseline (2028) airport passenger generated vehicle trips, the forecasted Projected Future Conditions Baseline (2028) Design Day flight schedule and the existing conditions trip generation model were used. To estimate the number of arriving and departing passengers each hour, a passenger load factor was applied to each flight in the Projected Future Conditions Baseline (2028) Design Day flight schedule. Since the transportation analysis pertains to only the passengers who use the landside facilities (i.e., originating and terminating passengers), the analysis excluded the estimated number of connecting passengers since they do not use landside facilities, leaving only the originating and terminating passengers for each flight. See **Appendix B** of this EIR for additional information regarding the operational assumptions used in the analysis. To estimate the number of passengers that would show up at both the arrivals and departures curbsides each hour, passenger "earliness" and "lateness" time distributions were applied to the originating or terminating passengers for each flight. This represents the estimated time passengers either arrive before their flight or the time it takes each passenger to get from their aircraft to the curbside. Data and information compiled from historic terminal analyses at LAX were used to provide ranges of times representing how early before a flight, passengers show up at the airport. Similarly, how much time it takes passengers alighting a flight to walk from the aircraft to the curbside while considering factors such as the percentage of passengers who walk straight to the curb with carry-on bags only, stop at a restroom or concession, stop at baggage claim, etc. Based on this information, estimates of when either originating or terminating passengers are at the curbside is estimated.

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[13] LAWA Passenger Statistics available at: https://www.lawa.org/lawa-investor-relations/statistics-for-lax/volume-of-air-traffic.

[14] The trip generation model available at the time of the analysis was calibrated to 2018 count data. The model relied on video data for accuracy. Such video data were not available when 2019 trip generation data were obtained; therefore, the model was not recalibrated to 2019. Instead, data from a Friday in August 2018 was used to estimate the hourly vehicle trips at a curbside based on a gated airline passenger schedule also for a Friday in August 2018. Since the difference in time was only one year, use of the 2018 trip generation model is representative of 2019 conditions. Since the analysis was prepared, the 2019 data has become available and shows a -0.01 percent difference in comparison to 2018, thus confirming that the 2018 model is representative of existing (2019) conditions and accurate for use in the analysis.

To account for anticipated changes in passenger mode choice (i.e., choice between various transportation modes, such as a passenger's own private vehicle, a taxi, a shuttle, a rental car, transit, etc.) by 2028, expected to be caused in large part by the continued growth in TNC usage, the existing mode splits were adjusted to estimate the 2028 passenger mode splits. The existing mode split estimates were then replaced with the 2028 mode splits in the trip generation model. The assumed existing and 2028 passenger modes splits are provided in **Appendix G.4**, *Trip Generation*. The future mode splits and assignments assumed for the project analysis were generally similar to those previously used in the LAX Landside Access and Modernization Program EIR,[15] and were estimated based primarily on trends in historical vehicle mode share data maintained by LAWA. The most notable change from previous assumptions pertained to TNCs. TNCs have been gaining mode share at the expense of other legacy modes since they began operating at the airport. While the TNC mode share continues to grow each year, the rate of growth on an annual basis has begun to decrease as there are fewer and fewer passengers in other modes willing to switch to TNCs. Over time the rate of change in TNC growth has been declining. Using the historical data, a regression analysis was used to estimate when the annual growth in TNC mode share would level off and stabilize (see **Appendix G.4**, *Trip Generation*). As part of this analysis, the continued annual growth in TNC mode share was accommodated by reducing the mode share of other modes, again based on historical trends.

By updating the 2028 mode splits and inputting the hourly passenger information in the trip generation model, the Projected Future Conditions Baseline (2028) Design Day vehicle volumes for each hour of the day and defined by vehicle mode were estimated. However, since Phase 1 of the LAX Landside Access Modernization Program is expected to be complete by 2028, the future airport passenger generated traffic was redistributed between the CTA and the new facilities outside the CTA (i.e., the ITF West, ITF East, and CONRAC) based on assumptions made for the transportation analysis of the proposed Project. The redistribution of traffic was based on assumed future vehicle mode assignments (i.e., which facility each mode is assumed for pick-up and/or drop-off passengers at) as projected by LAWA. Additionally, modes such as private vehicles, taxis, TNCs, and limousines are assumed to be permitted to pick-up/drop-off passengers in the CTA or at one of the ITFs. The distribution of trips between each facility took into consideration the assumptions used in the LAX Landside Access Modernization Program EIR, with additional refinements to maximize the capacity of the new APM system by assuming more TNC and taxi trips to the ITFs. To account for this new redistribution, the estimated Projected Future Conditions Baseline (2028) Design Day vehicle volumes were distributed between the CTA and each of the facilities outside the CTA, based on the future vehicle mode assumptions. Finally, the estimated volumes entering and exiting the CTA were based on the regional distributions observed in the existing conditions. The future vehicle mode assumptions and Projected Future Conditions Baseline (2028) trip volumes are provided in **Appendix G.4**, *Trip Generation*.

Proposed Project (2028) Trip Generation

The trip generation for the proposed Project in 2028 (i.e., the With Project scenario) was developed using the same methodology as described for the Projected Future Conditions Baseline (2028). The only difference was that the 2028 proposed Project Design Day flight schedule was used to estimate passengers on both the arrivals and departures level curbsides (see **Appendix B.1** for discussion of the Design Day flight schedule). The difference in the airline/aircraft/passenger assignments for the proposed Project versus the Projected Future Conditions Baseline (2028) pertains to assigned gating in the flight schedules for each scenario. For example, aircraft, and therefore passengers, are assigned to Terminal 9 in the proposed Project condition, but for the Projected Future Conditions Baseline (2028), they are

[15] City of Los Angeles, Los Angeles World Airports, *Final Environmental Impact Report for Los Angeles International Airport (LAX) Landside Access Modernization Program*, (SCH 2015021014), Appendix O – Off-Airport Traffic Study, February 2017. Available: https://www.lawa.org/en/connectinglax/automated-people-mover/documents.

instead assigned throughout the CTA. As a result, traffic assignments are distributed differently between terminals based on which schedule is used. The forecast 2028 passenger mode splits were unchanged, while the 2028 mode assignments were applied to passengers assigned to either the CTA terminals or Terminal 9 to estimate the vehicle trips for each. The 2028 Proposed Project trip volumes are provided in **Appendix G.4**, *Trip Generation*.

4.8.2.2.3 Methodology for Assessing VMT Impacts

The LADOT TAG focuses upon traditional residential, office, and retail developments and does not specifically address unique uses such as LAX. As discussed in the TAG guidance, "some projects will not fit into the above categories [i.e. residential, office, and retail]. In such cases, with the concurrence of LADOT, a customized approach can be used…" In order to determine the proposed Project's impacts related to VMT, a Project-specific methodology was developed by LAWA in consultation with LADOT.

The majority of the VMT associated with LAX is generated by passengers and employees. Therefore, separate methodologies were developed for evaluating VMT associated with each of these users. The Projected Future Conditions Baseline (2028) scenario was used as the basis on which to evaluate employee and passenger VMT.

Daily VMT per Employee

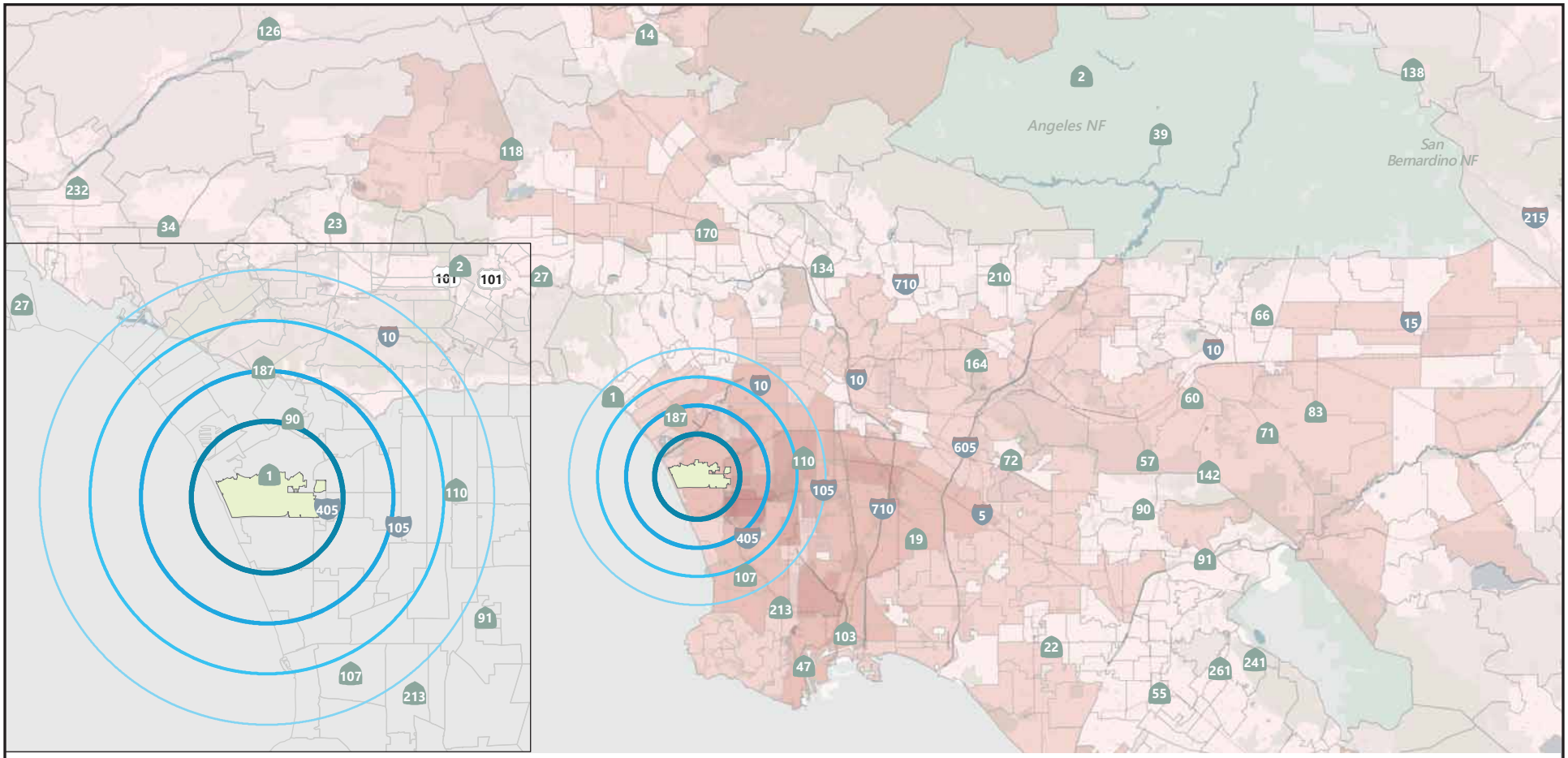
The Daily VMT per Employee metric is the average VMT generated by each employee at airport uses on a typical weekday. This methodology is consistent with the approach suggested by OPR and the LADOT TAG for employee VMT.

Estimation of average daily VMT per employee for LAX is complex and relied upon detailed information from LAWA, extensive data collection, and an in-depth technical analysis as described herein. LAX has over 50,000 employees including LAWA staff, FAA employees, airline crews, operators at cargo facilities, maintenance employees, etc. In normal circumstances, LAX operates 24 hours per day, 365 days per year. As a result, LAX employees work various shifts and have different daily schedules. The number of employees at the airport varies by the day of the week. To calculate existing average Daily VMT per Employee, multiple data sources were used. The following list describes the information used (more detail is available in **Appendix G.11**, *Transportation Data*):

- LAWA employee zip code information
- LAWA ride share program information
- Peak hour traffic counts at 70 airport-related driveways
- Daily (24-hour) traffic counts at 51 airport-related driveways and parking lots
- Hourly inbound/outbound automated parking data for the west and east employee parking lots (located north of Arbor Vitae Street), the south employee parking lot (located south of Arbor Vitae Street),[16] and the parking structures within the CTA
- Vehicle occupancy data at employee parking lots
- 2018 LAX Airport Employee Survey data
- "Big Data" including cell phone probe data for employees commuting to/from the airport

Figure 4.8-1 shows the distribution of the home locations of LAX employees by zip code. Approximately 31 percent of employees reside in the nearby cities of Inglewood, El Segundo, Hawthorne, Long Beach, Torrance, and in unincorporated areas, where their commute (driving distance) to LAX is 10 miles or less.

[16] City of Los Angeles, Los Angeles World Airport, *Los Angeles International Airport (LAX) Remote Employee Parking Program,* Revised January 30, 2020. Available: https://www.flylax.com/-/media/flylax/pdfs/parking/employee-lots-rules-and-regulations.ashx#:~:text=Los%20Angeles%20World%20Airports%20(LAWA,for%20a%20%2460%20monthly%20fee.



LAX Airfield and Terminal Modernization Project	Daily Distribution of LAX Employee Residences by Residential Zip Code	Figure **4.8-1**

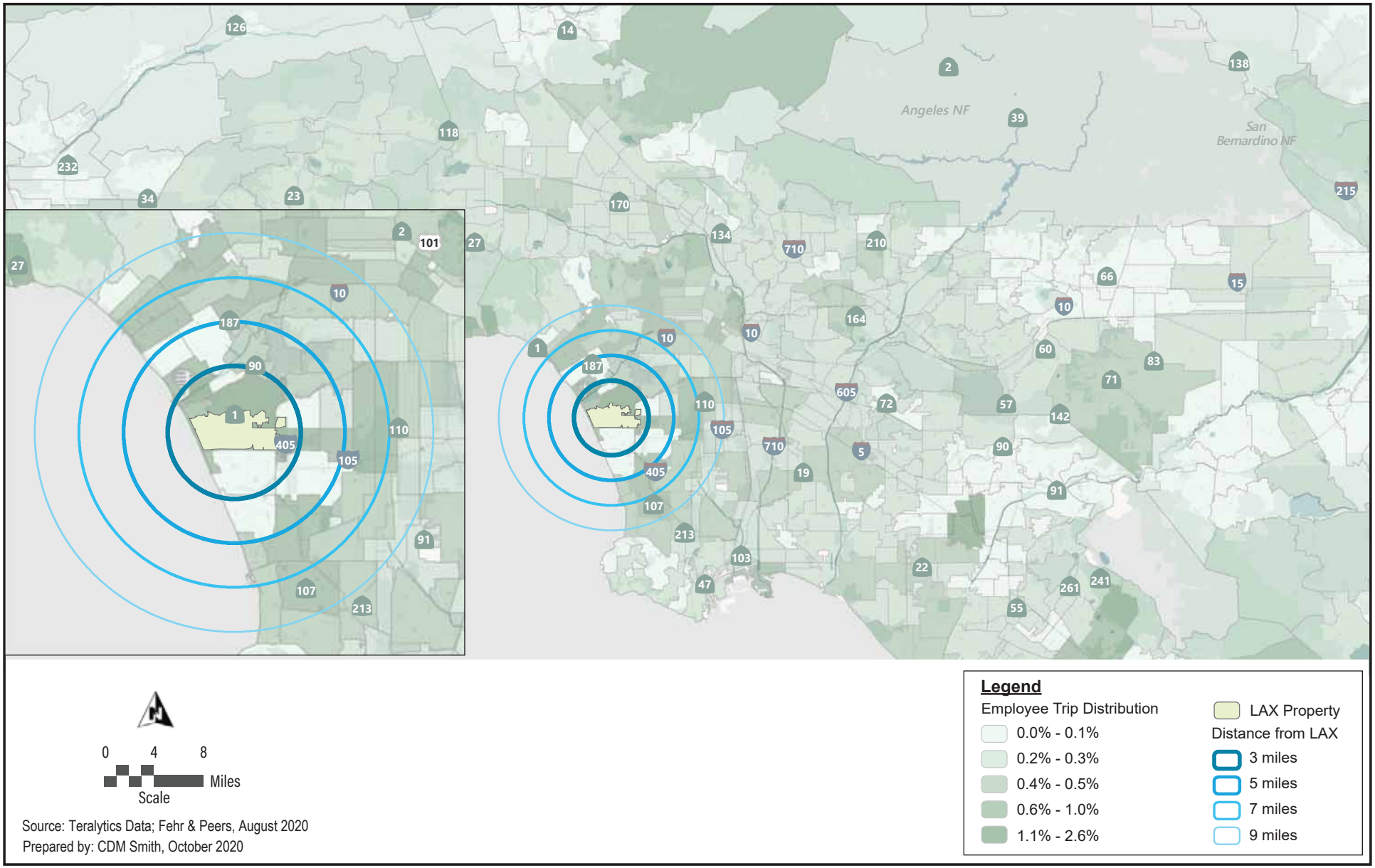
Approximately 17 percent of employees are based in Orange, San Bernardino, and Riverside counties, or in north Los Angeles County (e.g., Palmdale). For these employees, their commute to LAX is between 25 to 50 miles.

Cell phone data (collected in August 2019) was also used to identify daily patterns of origin and destination flows for employees. For purposes of this analysis, a regular work trip to LAX was defined as a trip by an employee who travels to the airport at least three times a week. The cell phone data were compared to the employee zip code distribution and employee survey data to ensure accuracy. Overall, the distribution of employee home locations (from zip codes) was similar to the distribution of employee origin trips going to LAX; therefore, the cell phone data set provided an accurate representation of employee trip distribution. The trip information was provided at an aggregate census tract level data by the data provider. **Figure 4.8-2** shows the average distribution of employee trips to/from LAX.

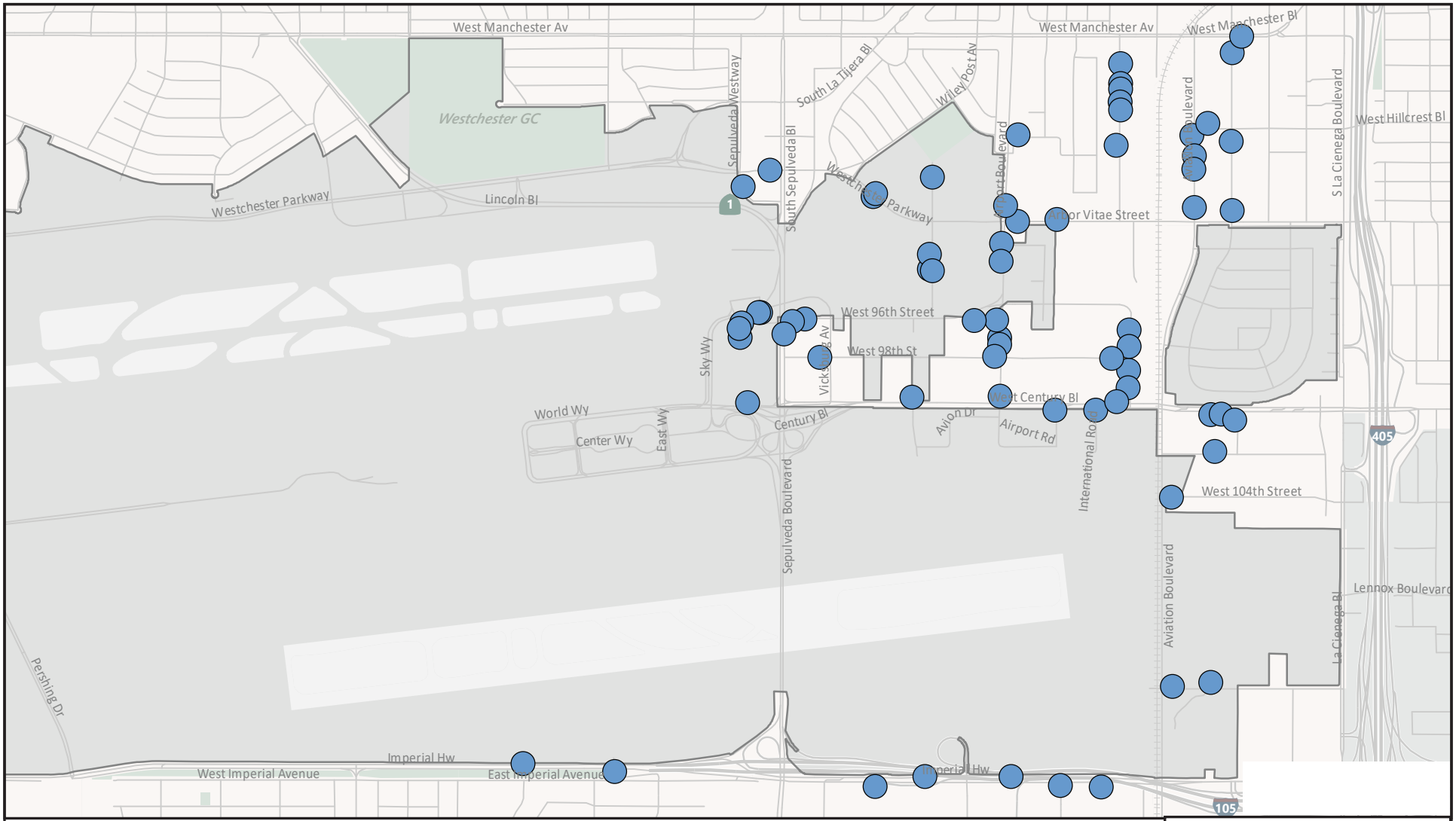
Figure 4.8-3 shows the location of the public and private passenger parking lots, rental car facilities, employee parking lots, and cargo facilities where peak hour and daily counts were collected. Daily employee trip generation was estimated for all facilities based on the available counts. Employee trips also occur between different facilities at LAX; cell phone probe data were used to identify the percentages of intra-airport trips versus commuter trips.

The average Daily VMT per Employee rate was estimated for parking lots where it was possible to isolate employee counts. For these facilities, vehicle trip generation was based on the driveway counts and trip distribution was based on the cell phone data. The Project Travel Demand Model was used to assign the trips to the roadway network and calculate the VMT. Finally, the Average Vehicle Occupancy, observed at a subset of these locations, was applied to estimate the Daily VMT per employee rate.

The number of new employees associated with operation of Concourse 0 and Terminal 9 was estimated based on the number and types of existing employees associated with operation of comparable facilities at LAX. For this analysis, Terminal 1 served as a basis for estimating the number of future employees at Concourse 0 and Terminal 7 was the basis for Terminal 9, with adjustments for the proportional sizes (i.e., square footages of floor area) of the existing and proposed future facilities. More specifically, the type of aircraft and flights anticipated to operate out of Concourse 0 would be generally similar to those nearby at Terminal 1, as currently operated by Southwest Airlines (i.e., narrowbody aircraft on primarily domestic flights with some limited international flights), while the types of flights currently occurring at Terminal 7 would be generally comparable to the types of activity anticipated to occur at Terminal 9 (i.e., combination of domestic and international, including long-haul, flights with on-site international passenger processing capabilities operated by a major airline with alliance partners (i.e., Star Alliance airlines). Approximately 1,880 employees were estimated to be required for a typical 8- to 9-hour shift for operation of Concourse 0 and Terminal 9 (i.e., 590 employees for Concourse 0 and 1,290 employees for Terminal 9), including for security, airline employees, concessions, and custodial/maintenance. Given that the subject facilities would operate 24-hours per day, it was assumed that full staffing would occur for two shifts and staffing would be reduced to about half for the third shift, which is generally consistent with the staffing loads of current terminal operations resulting in a daily total of approximately 4,700 employees (i.e., 1,880 multiplied time 2.5).



LAX Airfield and Terminal Modernization Project	Daily Distribution of LAX Employee Trips Based on Big Data	Figure **4.8-2**



LAX Airfield and Terminal Modernization Project

Driveway Count Locations

Figure
4.8-3

Daily VMT per Passenger

The Daily Passenger VMT metric is the total VMT generated by airport passengers on a typical weekday. This metric was developed in the absence of a recommended approach by OPR or LADOT for airport passengers but was discussed and coordinated with LADOT. This approach is also generally consistent with CEQA case law which explains that evaluation of project impact significance via an efficiency metric is appropriate.

In order to understand and define passenger VMT, the following information was used:

- LAWA passenger surveys (Spring and Fall 2019)
- LAWA shuttle data
- Peak hour traffic counts at 70 airport-related driveways
- Daily (24-hour) traffic counts at 51 airport-related driveways and parking lots
- Hourly inbound/outbound automated parking data for the airport passenger parking lots and the parking structures within the CTA
- "Big Data" including cell phone probe data for passengers traveling to/from the airport

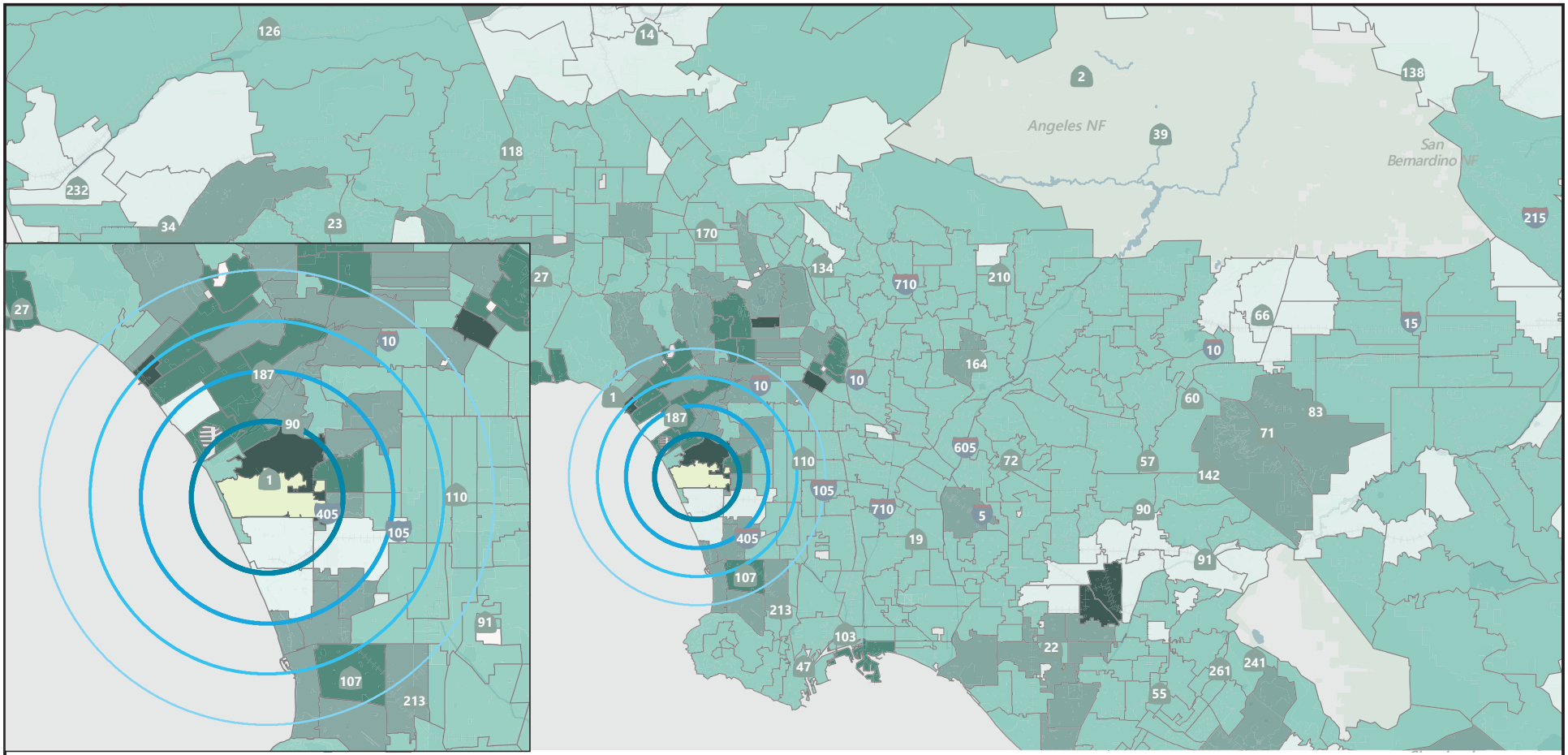
The assessment of passenger VMT differs from employee VMT in that LAX is considered a regional serving land use and, as such, it includes passenger trips from beyond Los Angeles County. Thus, in accordance with the LADOT TAG guidance for regional serving venues, it is important to consider the net effect or increase in total VMT associated with the proposed Project.

The data for the passenger VMT evaluation were also collected in August 2019. When using the Big Data for passenger travel, the origin of a trip was defined as a location where a passenger has previously stayed a minimum of four hours. This assumption was defined to identify the full trip length for passengers, instead of shorter intermediate trips. **Figure 4.8-4** shows the average distribution of passenger trips to/from LAX.

As described above, passenger vehicle trip generation for the CTA (and for ITFs in the 2028 future scenarios) was developed for this analysis. The passenger trip distribution was based on the cell phone data. Using this information, the LAX travel demand model was developed to assign trips to the roadway network and subsequently calculate the VMT. The total airport passenger VMT is the sum of all passenger VMT traveling directly to the CTA (as well as to the ITF East and ITF West in the 2028 future year scenarios) and to the major LAX parking facilities.

4.8.2.3 Methodology for Assessing Induced VMT

Induced travel is a term used to describe how travel demand responds to roadway capacity expansion. Consistent with the theory of supply and demand, the general topic of research concerning induced travel is that reducing the "cost" of travel (i.e., reduced travel time due to a new road improvement) will increase the amount of travel. In other words, some types of road improvements alone can prompt traffic increases. This does not mean that increased roadway capacity necessarily results in new project-related vehicle trips. Instead, it may mean that the effect of increasing roadway capacity results in longer trips, trips shifting from other modes, and newly generated trips. It may also mean that increased roadway capacity alleviates congestion and changes drivers' route selection in a way that increases VMT. In this EIR, induced VMT refers to the VMT that is unrelated to airport trips, but is rather related to the improved roadway operations on nearby surface streets as a result of the roadway improvements that are part of the proposed Project.



LAX Airfield and Terminal Modernization Project	Daily Distribution of LAX Passenger Trips Based on Big Data	Figure **4.8-4**

As described in the LADOT TAG, "[t]ransportation projects that increase vehicular capacity can lead to additional travel on the road network, which can include induced vehicle travel due to factors such as increased speed and induced growth." However, OPR's Technical Advisory and the TAG recognize that not every roadway improvement must be considered growth inducing. For example, the "[i]nstallation, removal, or reconfiguration of traffic lanes that are not for through traffic" may not be growth inducing.[17] The TAG suggests methodology to measure induced VMT. This analysis assesses the effect of the proposed landside (i.e., roadway) improvements that would be added as a result of the proposed Project on total VMT. When evaluating induced VMT, the LADOT TAG provides for consideration of both project impacts and cumulative impacts. The LADOT TAG refers to project impacts as short-term effects, and cumulative effects as long-term effects. The short-term effects are concerned with isolating and understanding the influence new roadways have on inducing new non- airport travel, which may include longer trips; mode shift towards the automobile; route changes; and, in some cases, newly generated trips. The long-term effect measures the same changes as under the short-term, but also considers the effect of land use changes over time due to additional roadway capacity.

The following describes the methodology for determining both the short- and long-term induced VMT effects, which are different from the passenger VMT and employee VMT effects described earlier. The Projected Future Conditions Baseline (2028) scenario was used as the basis on which to evaluate induced VMT.

4.8.2.3.1 Short-Term Induced VMT Methodology

The Projected Future Conditions Baseline (2028) model was run both with and without the roadway network improvements proposed by the Project, with the same land use/SED inputs, in order to isolate the potential change in VMT with the Project as compared to without the Project. To assess the model's sensitivity to the Project's roadway network change effect on VMT (including induced vehicle travel), the analysis measured the VMT changes across the travel model. Total daily VMT (number of vehicles traveling on each street/freeway multiplied by distance of that street/freeway) were estimated within the boundary of the model both with and without roadway improvements included in the proposed Project. The resulting difference in VMT related to non-airport trips was considered to be short-term induced VMT.

4.8.2.3.2 Long-Term Induced VMT Methodology

In accordance with OPR and the latest published research,[18] an induced demand elasticity factor of 1.03[19] was applied to estimate long-term VMT, meaning that every percent increase in lane miles would result in a 1.03 percent increase in vehicle travel. The elasticity applied in this case represents the effect that the additional roadway capacity would have on travel demand. A number that is less than 1 is considered low or inelastic and would indicate that the increase in roadway capacity would have a negligible effect on inducing more travel; a value greater than 1 is considered to be high or elastic and would indicate that induced travel would be likely to occur as a result of the new roadways.

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17 State of California, Governor's Office of Planning and Research, *Technical Advisory on Evaluating Transportation Impacts in CEQA*, pp 20-22, December 2018. Available: http://www.opr.ca.gov/docs/20190122-743_Technical_Advisory.pdf.

18 See, e.g., California Air Resources Board, *Impact of Highway Capacity and Induced Travel on Passenger Vehicle Use and Greenhouse Gas Emissions*, *Policy Brief*, prepared by S. Handy and M. Boarnet, September 2014. Available: https://ww2.arb.ca.gov/sites/default/files/2020-06/Impact_of_Highway_Capacity_and_Induced_Travel_on_Passenger_Vehicle_Use_and_Greenhouse_Gas_Emissions_Policy_Brief.pdf; National Center for Sustainable Transportation, *Increasing Highway Capacity Unlikely to Relieve Traffic Congestion*, prepared by S. Handy, October 2015. Available: https://dot.ca.gov/-/media/dot-media/programs/research-innovation-system-information/documents/final-reports/10-12-2015-ncst_brief_inducedtravel_cs6_v3.pdf.

19 Duranton and Turner, *The Fundamental Law of Road Congestion: Evidence from US Cities*, American Economic Review 101 (October 2011): 2616–2652. Available: https://pubs.aeaweb.org/doi/pdfplus/10.1257/aer.101.6.2616.

4.8.2.4 Methodology for Evaluating Substantially Increased Hazards

4.8.2.4.1 Geometric Design Hazards

Impacts regarding the potential increase of hazards due to a geometric design feature generally relate to the design of access points to and from [a] project site, and may include safety, operational, or capacity impacts. Impacts can be related to vehicle/vehicle, vehicle/bicycle, or vehicle/pedestrian conflicts, as well as to operational delays caused by vehicles slowing and/or queuing to access a project site. In the case of the proposed Project, these conflicts may be created by ramp configurations or through the placement of ramps, loading areas, or intersections in areas of inadequate visibility, adjacent to bicycle or pedestrian facilities, or too close to busy or congested intersections. These impacts were evaluated for permanent conditions after Project completion.

This analysis focused upon locations where the new roadways introduce new vehicle access point and/or driveways to the site. Detailed screening analysis is presented in **Appendix G.10**, *Assessment of Hazards.* The following five locations would access the Project site from the public right-of-way and may be affected by the proposed Project driveways and infrastructure:

- Century Boulevard and Jetway Boulevard
- Sepulveda Boulevard and 96th Street
- Sepulveda Boulevard and Century Boulevard
- Sepulveda Boulevard south of World Way
- Vicksburg Avenue between 96th Street and 98th Street

4.8.2.4.2 Freeway Safety Analysis

Per the LADOT interim guidance[20] for freeway safety analysis, effective May 1, 2020, a freeway ramp queueing analysis is required if a development project would add 25 or more net new trips to a freeway off-ramp during the morning or afternoon peak hour. If a ramp queuing analysis is required, an effect is considered substantial, and therefore considered to be a safety concern, if the addition of project trips would result in the addition of two or more car lengths to a ramp queue that extends into the freeway mainline. If the addition of project trips results in a substantial effect and causes a safety concern, the location must be tested for safety issues which includes testing for a speed differential between the off-ramp queue and the mainline of the freeway during the particular peak hour. To evaluate the adequacy of the existing and future ramp storage lengths, LADOT's interim guidance indicates that the 95th percentile queue length should be used from the Synchro results worksheet, and this should be compared to 100 percent of the storage length on each lane of the ramp measured from the stop bar to the gore point.[21] If an auxiliary lane exists, 50 percent of the length of the auxiliary lane should be added to the ramp storage area.

This analysis focused upon a total of seven freeway off-ramps that may be affected by the proposed Project; these ramps are the main access to the airport's adjacent arterials from the freeway network. The seven freeway off-ramps are as follows:

- I-405 Northbound Off-Ramp & Century Boulevard
- I-405 Southbound Off-Ramp & 98th Street
- I-405 Southbound Off-Ramp & Howard Hughes Parkway

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20 City of Los Angeles, Department of Transportation, *LADOT Transportation Assessments – Interim Guidance for Freeway Safety Analysis,* May 1, 2020. Available: https://ladot.lacity.org/sites/default/files/2020-06/ladot-tag-interim-freeway-safety-analysis-guidance-may-2020-2.pdf.

21 95th percentile queue length estimate means at 95 percent of the times the vehicle queue length (number of vehicles x average length of a vehicle) at this location does not exceed this estimate.

- I-405 Southbound Off-Ramp & Florence Avenue
- I-405 Southbound Off-Ramp & La Tijera Boulevard
- I-105 Westbound Off-Ramp & Sepulveda Boulevard
- I-105 Westbound Off-Ramp & Imperial Highway/Nash Street

4.8.3 Existing Conditions

4.8.3.1 Regulatory Setting

This section identifies the regulatory setting related to applicable federal, state, regional, and local level plans, policies, and regulations. A brief summary of each is described below.

4.8.3.1.1 State

Senate Bill 743

As discussed in Section 4.8.1 above, SB 743 directed OPR to develop revisions to the State CEQA Guidelines to establish new criteria for determining the significance of transportation impacts and define alternative metrics for traffic LOS. The subsequent changes to CEQA requirements for transportation impact analyses included elimination of auto delay, LOS, and other similar measures of vehicular capacity or traffic congestion as a basis for determining significant impacts for land use projects and plans in California. Further, parking impacts are not considered significant impacts on the environment for particular types of development projects within certain infill areas with nearby frequent transit service. According to the legislative intent contained in SB 743, these changes to current practice were necessary to "more appropriately balance the needs of congestion management with statewide goals related to infill development, promotion of public health through active transportation, and reduction of greenhouse gas emissions."

Pursuant to SB 743, CEQA Guidelines Section 15064.3 was adopted in December of 2018, and states:

> (b) Criteria for Analyzing Transportation Impacts.
>
> Lead agencies may use thresholds of significance for vehicle miles traveled recommended by other public agencies or experts provided the threshold is supported by substantial evidence.
>
> (1) Vehicle Miles Traveled and Land Use Projects. A development project that results in vehicle miles traveled exceeding an applicable threshold of significance may indicate a significant impact. Generally, development projects that locate within one-half mile of either an existing major transit stop or a stop along an existing high quality transit corridor may be presumed to cause a less than significant transportation impact. Similarly, development projects that decrease vehicle miles traveled in the project area compared to existing conditions may be considered to have a less than significant transportation impact.
>
> (2) Induced Vehicle Travel and Transportation Projects. Additional lane miles may induce automobile travel, and vehicle miles traveled, compared to existing conditions. Transportation projects that reduce, or have no impact on, vehicle miles traveled may be presumed to cause a less than significant transportation impact. To the extent that the potential for induced travel has already been adequately analyzed at a programmatic level, a lead agency may incorporate that analysis by reference.

California Assembly Bill 32, Senate Bill 32, and Senate Bill 375

With the passage of AB 32, the Global Warming Solutions Act of 2006,[22] the State of California committed itself to reducing statewide GHG emissions to 1990 levels by 2020. AB 32 was supplemented with SB 32 in 2016, which requires statewide GHG emissions to be reduced to 40 percent below the 1990 level by 2030. The California Air Resources Board (CARB) is coordinating the response to comply with AB 32 and SB 32.

In December 2008, CARB approved the AB 32 Climate Change Scoping Plan (Scoping Plan).[23] The Scoping Plan incorporated the framework from SB 375[24] as the means for achieving regional transportation-related GHG targets. SB 375 provides guidance on how curbing emissions from cars and light trucks can help the State comply with AB 32. Based on the 2017 GHG inventory data (i.e., the latest year for which data are available), California emitted 424.10 million metric tons of carbon dioxide equivalent ($MMTCO_2e$) if emissions associated with imported electrical power are included, and approximately 400 $MMTCO_2e$ if these emissions are excluded.[25]

There are five major components to SB 375. Three of the five components are potentially relevant to the proposed Project, as follows:[26]

- Regional GHG emissions targets: CARB's Regional Targets Advisory Committee guides the adoption of targets to be met by 2020 and 2035 for each Metropolitan Planning Organization (MPO) in the State. (SCAG is the MPO for a six-county region, including Los Angeles County.) These targets, which MPOs may propose themselves, are updated every eight years in conjunction with the revision of housing and transportation elements.
- MPOs are required to prepare an SCS that provides a plan for meeting regional targets. The SCS and the RTP must be consistent with each other, including action items and financing decisions. If the SCS does not meet the regional target, the MPO must produce an Alternative Planning Strategy that details an alternative plan to meet the target.
- MPOs must use transportation and air pollutant emissions modeling techniques consistent with guidelines prepared by the California Transportation Commission (CTC). Regional transportation planning agencies, cities, and counties are encouraged, but not required, to use travel demand models consistent with the CTC guidelines.

Other State Programs and Plans

The following state regulatory plans, policies, and regulations also pertain to transportation. Summaries of these documents are provided in **Appendix G.8**, *Other State/Regional/Local Plans, Policies, and Regulations*. These documents were not adopted for the purpose of protecting the environment; therefore, analysis of whether or not the proposed Project would conflict with these plans, policies, and regulations is not required.

- Complete Streets Act[27]

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22 California Assembly Bill 32, Chapter 488, Statutes of 2006.

23 California Air Resources Board, *Climate Change Scoping Plan: a Framework for Change Pursuant to AB 32 The California Global Warming Solutions Act of 2006*, December 2008. Available: https://ww3.arb.ca.gov/cc/scopingplan/document/adopted_scoping_plan.pdf.

24 California Senate Bill 375, Chapter 728, Statutes of 2008.

25 California Air Resources Board, *California Greenhouse Gas Inventory for 2000-2017 - by Category as Defined in the 2008 Scoping Plan*, August 12, 2019. Available: https://ww3.arb.ca.gov/cc/inventory/data/tables/ghg_inventory_scopingplan_sum_2000-17.pdf.

26 The two components that are not relevant to the proposed Project include: (1) requirements for coordinating regional housing elements and transportation plans; and (2) CEQA streamlining for certain types of projects.

27 Government Code Sections 65040.2 and 65302.

- Complete Streets Directive[28]
- Statewide Transportation Improvement Program
- Parking Cash Out
- California Vehicle Code

4.8.3.1.2 Regional

A number of regional improvement plans affect transportation in the City of Los Angeles. This includes the Long Range Transportation Plan (LRTP) prepared by Los Angeles County Metropolitan Transportation Authority (Metro), the RTP/SCS, and the Regional Transportation Improvement Plan (RTIP).[29]

Metro 2009 Long Range Transportation Plan

The 2009 LRTP[30] includes funding for general categories of improvements through the 2040 planning horizon year, such as Arterial Improvements, Non-motorized Transportation, Rideshare and Other Incentive Programs, Park-and-Ride Lot Expansion, and ITS improvements for which Call for Project Applications can be submitted for projects in Los Angeles County. Metro also has a Short-Range Transportation Plan (SRTP)[31] to define the near-term (through year 2024) transportation priorities in Los Angeles County. In addition to the regional transportation plans, Metro has recently adopted a Complete Streets Policy[32] and a First Last Mile Strategic Plan.[33] Descriptions of these plans are provided in **Appendix G.8**, *Other State/Regional/Local Plans, Policies, and Regulations*.

Regional Transportation Plan/Sustainable Communities Strategy and Regional Transportation Improvement Program

In September 2020, the SCAG Regional Council adopted the 2020-2045 RTP/SCS,[34] referred to as Connect SoCal.

The RTP/SCS is a planning document required under state and federal statutes that encompasses six counties in the SCAG region: Los Angeles, Orange, San Bernardino, Riverside, Ventura, and Imperial. The RTP/SCS forecasts long-term transportation demands and identifies policies, actions, and funding sources to accommodate these demands. The RTP/SCS identifies proposed new regional transportation facilities, regional transportation systems management strategies, regional transportation demand management, and regional land use strategies. The RTP/SCS also takes into account the RTIP, which lists all of the regional funded/programmed improvements over a six-year period. Metro provides input to SCAG regarding new proposed transportation system improvements to add to the RTP/SCS, which are also incorporated in the RTIP.

With respect to transportation projects in the vicinity of LAX, the Aviation and Airport Ground Access Technical Report for the 2020-2045 RTP/SCS identifies the new Metro Crenshaw/LAX Line and LAX APM

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28 State of California, Department of Transportation, *Deputy Directive DD-64-R2: Complete Streets – Integrating the Transportation System*, October 17, 2014. Available: https://www.calbike.org/wp-content/uploads/2019/08/DD64_R2.pdf.

29 Los Angeles County Metropolitan Transportation Authority, *2020 Regional Transportation Improvement Program – Los Angeles County Submittal*, December 2019. Available: http://media.metro.net/projects_studies/funding/images/2020_RTIP.pdf.

30 Los Angeles County Metropolitan Transportation Authority, *2009 Long Range Transportation Plan*, 2009. Available: https://www.metro.net/projects/lrtp/.

31 Los Angeles County Metropolitan Transportation Authority, *2014 Short Range Transportation Plan,* 2014. Available: http://media.metro.net/projects_studies/srtp/report_srtp_2014.pdf.

32 Los Angeles County Metropolitan Transportation Authority, *Metro Complete Streets Policy*, October 2014. Available: http://media.metro.net/projects_studies/sustainability/images/policy_completestreets_2014-10.pdf.

33 Los Angeles County Metropolitan Transportation Authority and Southern California Association of Governments, *First Last Mile Strategic Plan & Planning Guidelines*, March 2014. Available: https://media.metro.net/docs/First_Last_Mile_Strategic_Plan.pdf.

34 Southern California Association of Governments, *Connect SoCal: The 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy of the Southern California Association of Governments*, adopted September 3, 2020. Available: https://www.connectsocal.org/Documents/Adopted/0903fConnectSoCal-Plan.pdf.

as major transit capital projects on the Transportation System Project List.[35] It also acknowledges both the LAX Landside Access and Modernization Program – including the APM, ITFs, CONRAC, and roadway improvements – and the proposed Project (i.e., the LAX Airfield and Terminal Modernization Project) as projects that address ground access at LAX. The Metro Crenshaw/LAX Line and LAX Landside Access Modernization Program improvements are included on the Connect SoCal Transportation System Project List,[36] as are the AMC 96th Street Transit Station and other transit and transportation improvements in the vicinity of LAX. The roadway improvements that are part of the proposed Project are not on this list, but can potentially be added after they are further developed and designed.

4.8.3.1.3 Local

City of Los Angeles General Plan Framework Element

The City of Los Angeles General Plan Framework Element,[37] which helps guide the formation of the land use policies therein, provides relevant objectives to implement its land use goals including accommodating a diversity of uses that support the needs of the City's existing and future residents, businesses, and visitors (Objective 3.1), as well as encouraging the development of new regional centers that provide job opportunities and are accessible to the region (Objective 3.10). The primary goals of the Transportation Chapter of the Framework Element are to provide accessibility to commerce, to work opportunities, and to essential services, and to maintain acceptable levels of mobility of all those who live, work, travel, or move goods in Los Angeles (Chapter 8). The objectives are set forth in the proceeding Transportation Element of the General Plan.

Los Angeles Mobility Plan 2035

Los Angeles Mobility Plan 2035[38] is the transportation element of the City of Los Angeles General Plan. It lays out a vision for designing safer, more vibrant streets that are accessible to people no matter how they travel. The Mobility Plan 2035 was adopted on August 11, 2015. The Mobility Plan 2035 is compliant with the 2008 Complete Streets Act (AB 1358), which mandates that the circulation element of a city's General Plan be modified to plan for a balanced, multimodal transportation network that meets the needs of all users of streets, roads, and highways, defined to include motorists, pedestrians, bicyclists, children, persons with disabilities, seniors, movers of commercial goods, and users of public transportation, in a manner that is suitable to the rural, suburban, or urban context of the general plan. The Mobility Plan 2035 objectives include, among others, Policy 2.1: Design, plan, and operate streets to serve multiple purposes and provide flexibility in design to adapt to future demands, Policy 2.5: Improve the performance and reliability of existing and future bus service, and Policy 3.9: Increase network access.

City of Los Angeles General Plan Land Use Element

The City of Los Angeles maintains 35 community plans and the LAX Plan and the Port of Los Angeles Plan, which establish neighborhood-specific and commercial goals and implementation strategies and form the General Plan's Land Use Element. The community plan for the airport is the LAX Plan.

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35 Southern California Association of Governments, *Connect SoCal Technical Report: Transportation System - Aviation and Airport Ground Access*, adopted September 3, 2020. Available: https://www.connectsocal.org/Documents/Adopted/0903fConnectSoCal_Aviation-And-Airport-Ground-Access.pdf.

36 Southern California Association of Governments, *Connect SoCal Technical Report: Transportation Systems Project List Technical Report*, adopted May 7, 2020. Available: https://www.connectsocal.org/Documents/Adopted/0903fConnectSoCal_Project-List.pdf.

37 City of Los Angeles, Department of City Planning, *The Citywide General Plan Framework - An Element of the City of Los Angeles General Plan*, December 11, 1996, re-adopted August 8, 2001. Available: https://planning.lacity.org/cwd/framwk/chapters/00/00.htm.

38 City of Los Angeles, Department of City Planning, *Mobility Plan 2035 - An Element of the General Plan*, amended September 7, 2016. Available: https://planning.lacity.org/odocument/523f2a95-9d72-41d7-aba5-1972f84c1d36/Mobility_Plan_2035.pdf.

The LAX Plan

The LAX Plan is a community plan of the land use element of the City of Los Angeles General Plan.[39] The LAX Plan is intended to promote an arrangement of airport uses that encourages and contributes to the modernization of the airport in an orderly and flexible manner that promotes the safe and secure movement and processing of passengers and cargo. It provides a land use policy framework to guide implementation on a broad level by establishing goals, objectives, policies, and programs for development. The LAX Plan is intended to allow the airport to respond to emerging new technologies, economic trends, and functional needs. One of the main goals of the LAX Plan (Goal 6) is to improve ground access to LAX. The Plan includes specific policies relating to circulation and access intended to provide options for passengers and employees to access the airport, including Policy P9 (relieve traffic congestion in the CTA and on area surface streets and roads).

Vision Zero Los Angeles

The Vision Zero Los Angeles Action Plan[40] 2015-2025 strives to eliminate traffic-related deaths in Los Angeles by 2025 through multiple strategies, such as modifying streets to better serve vulnerable road users. Originating in Sweden, Vision Zero is an international movement to eliminate traffic deaths and is based on the philosophy that each death is both unacceptable and preventable. One section of Sepulveda Boulevard, the east leg of Century Boulevard, and segments of World Way North and World Way South within the CTA are designated as part of the City's High Injury Network (HIN). The HIN comprises just 6 percent of City streets but represents nearly two-thirds of all severe and fatal collisions involving people walking and biking.

Century Boulevard Streetscape Plan

The Century Boulevard Streetscape Plan[41] provides guidelines and standards for streetscape improvements in the public right-of-way and the Pedestrian Amenity Area on private properties along Century Boulevard within the City of Los Angeles. The Century Boulevard Streetscape Plan governs an approximately 1.5-mile segment of Century Boulevard between Sepulveda Boulevard to the west and La Cienega Boulevard to the east (excluding the two end streets). This portion of the corridor is considered by many to be the "Gateway to Los Angeles" due to the millions of annual passengers that access LAX via Century Boulevard from Interstate 405 (I-405) and adjacent arterials. The properties along the corridor also represent a significant regional economic asset with a variety of high-rise hotels and office buildings. Other uses include restaurants, retail shops, airport facilities, rental car services, off-airport parking, and other neighborhood and airport supportive services. The Plan identifies improvements to the segments of Century Boulevard that are adjacent to the proposed Project roadway improvements and Terminal 9 (i.e., Segments 1a, 1b, and 1c), including wider and buffered sidewalks, and landscaping. Implementation of the improvements identified in the Plan is accomplished by private property owners along the corridor through the entitlement process, in conjunction with the permitting of other improvements.

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[39] City of Los Angeles, Department of City Planning, *Los Angeles International Airport - LAX Plan*, adopted December 14, 2004, last amended June 7, 2017. Available: https://www.lawa.org/-/media/lawa-web/lawa-our-lax/plan-and-ordiance/2017-lax-plan.ashx?la=en&hash=A56B9B036C9CC63428A4AC5DC0E910992C1B0F53.

[40] City of Los Angeles, Department of Transportation, *Vision Zero Los Angeles 2015-2025 Action Plan*, January 2017. Available: https://ladotlivablestreets-cms.org/uploads/cb1ecdfacabb4bcd97c922382b165e79.pdf.

[41] City of Los Angeles, *Century Boulevard Streetscape Plan*, May 21, 2018. Available: https://planning.lacity.org/plans-policies/overlays/century-boulevard.

Plan for a Healthy Los Angeles[42]

The plan includes policies directing several City departments to develop plans that promote active transportation and safety. The intent of the plan is to build a healthy and resilient environment that provides access to affordable and safe opportunities for all. With respect to transportation, the objective is to provide a balanced, multi-modal, and sustainable transportation system that offers safe and efficient options for all users.

Other Local Programs and Plans

Additionally, the following local regulatory documents were evaluated with respect to the proposed Project to determine the potential for inconsistencies. Although they may not be included as part of the City documents that establish the regulatory framework, they were reviewed given their relevancy to the proposed Project and the association to other plans and policies such as Vision Zero and the Mobility Plan. More information about these other local plans and policies, including their descriptions, is provided in **Appendix G.8**, *Other State/Regional/Local Plans, Policies, and Regulations*:

- City of Los Angeles Safety Element[43]
- Great Streets for Los Angeles/LADOT Strategic Plan[44]
- Los Angeles Fire Department Strategic Plan 2018-2020[45]

4.8.3.2 Environmental Setting

4.8.3.2.1 Existing Facilities

This section provides a description of existing transportation infrastructure and conditions in the vicinity of the proposed Project site (**Figure 4.8-5**). An inventory of the existing street system, transit system, bicycle system, and pedestrian system serving the airport, as well as the names, locations, sizes, and trip generation for other (cumulative) projects, are described in this section.

Existing Street System

The existing street system in the vicinity of LAX consists of a regional highway system, major arterials ("Boulevards" per Mobility Plan 2035), and a local street system including secondary arterials ("Avenue" per Mobility Plan 2035), collectors and local streets (see Figure 4.8-5).

The San Diego Freeway (I-405), the Glenn Anderson Freeway (I-105), and Marina Freeway (SR-90) provide regional access to the Project site. W. Century Boulevard, Lincoln Boulevard, W. Manchester Avenue and W. Florence Avenue provide the main east-west access to the Project site, while La Cienega Boulevard, Aviation Boulevard, Airport Boulevard, La Tijera Boulevard, and Sepulveda Boulevard provide the main north-south access. Some of the smaller roadways also serve the airport such as 96th Street, 98th Street, Avion Drive, Jenny Avenue, and Vicksburg Avenue. Brief descriptions of these roadways, including number of lanes, speed limits, parking availability, and functional classes per Mobility Plan 2035, are presented in **Appendix G.8**, *Other State/Regional/Local Plans, Policies, and Regulations*.

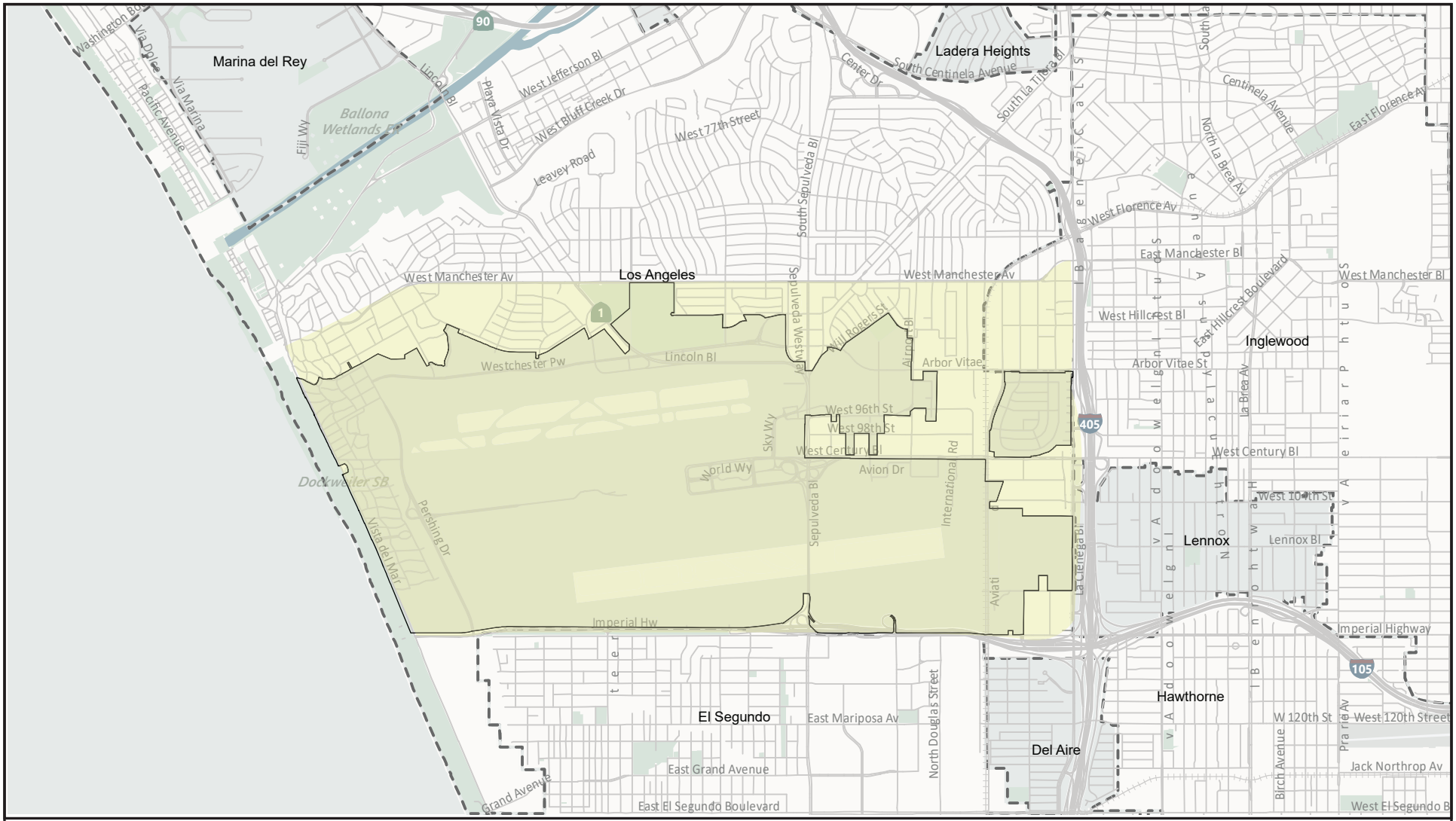
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42 City of Los Angeles, Department of City Planning, *Plan for a Healthy Los Angeles*, March 2015. Available: https://planning.lacity.org/odocument/7f065983-ff10-4e76-81e5-e166c9b78a9e/Plan_for_a_Healthy_Los_Angeles.pdf.

43 City of Los Angeles, Department of City Planning, *Safety Element of the City of Los Angeles General Plan,* November 1996.

44 City of Los Angeles, Department of Transportation, *Great Streets For Los Angeles – Strategic Plan*, 2014. Available: https://ladot.lacity.org/sites/g/files/wph266/f/LACITYP_029076.pdf.

45 City of Los Angeles Fire Department, *Strategic Plan 2018-2020: A Safer City 2.0*, March 2018. Available: https://www.lafd.org/about/about-lafd/strategic-plan.



Source: Fehr & Peers, August 2020
Prepared By: CDM Smith, October 2020

LAX Airfield and Terminal Modernization Project

Transportation Analysis Study Area and Existing Street System

Figure
4.8-5

Central Terminal Area Roadway System

The CTA roadway system consists of a two-level roadway (upper and lower levels circulating in a counterclockwise direction) with vehicular access to both the departure (upper) and arrival (lower) levels from Century Boulevard, Sepulveda Boulevard, and the 96th Street Bridge/Sky Way. **Figure 4.8-6** illustrates the CTA roadway system. The upper level roadway is primarily dedicated to passenger departure activity, while the lower level roadway is dedicated to passenger arrival activity. The CTA roadway network provides access to the CTA's parking garages, which accommodate short-term and daily parking for passengers and employees. A recirculation ramp located at the eastern end of the CTA and a ramp at the western end of Center Way, connecting to West Way, provide on-airport circulation from the departures level to the arrivals level. Center Way provides egress from the parking garages to Century Boulevard and Sepulveda Boulevard. The CTA roadway system has a posted speed limit of 25 mph.

The departures level roadway curbside consists of a 22-foot-wide stopping lane for passenger drop-offs and pick-ups in front of the various terminals, and three 10- to 12-foot-wide travel lanes for vehicles to circulate. Sepulveda Boulevard and Century Boulevard provide direct inbound access to the departures level. Direct egress from the departures level to southbound Sepulveda Boulevard and eastbound Century Boulevard is available. Vehicles headed northbound on Sepulveda Boulevard must use the ramp to Center Way and exit the airport with the arrivals level traffic at Center Way to access the northbound Sepulveda Boulevard clover-leaf ramp.

The arrivals level is served by two curbsides (an inner and outer curbside) and the associated roadway system. The inner and outer curbsides are separated by a 10-foot-wide pedestrian loading area. The inner curbside roadway generally consists of a 10-foot-wide loading lane and two 10-foot-wide circulating lanes. The outer roadway consists of a 20-foot-wide lane adjacent to a commercial loading area and three to five additional travel lanes used for circulation. Northbound and southbound Sepulveda Boulevard and westbound Century Boulevard provide direct inbound access to the arrivals level. Direct egress from the arrivals level roadway is provided to northbound and southbound Sepulveda Boulevard and eastbound Century Boulevard.

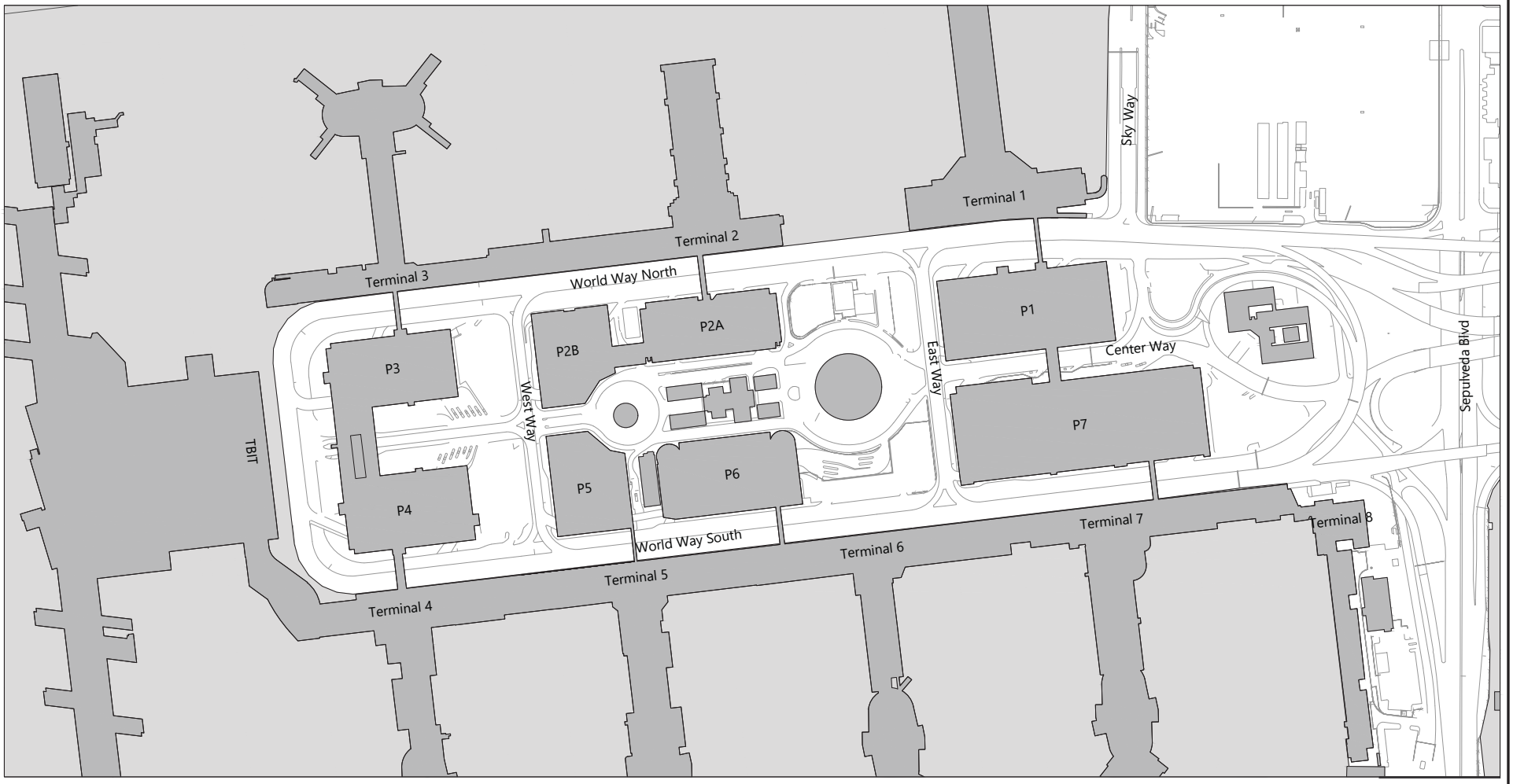
Existing Pedestrian Facilities

The main pedestrian connection to LAX is via Century Boulevard. Sidewalks and crosswalks are located on the north and south sides of Century Boulevard between I-405 and World Way. A gap in the sidewalk exists on the south side of Century Boulevard between World Way and Avion Drive. Landscaped buffers between the roadway and the pedestrian walkway are located on both sides of the street between Avion Drive and Aviation Boulevard. The sidewalk pavement is generally in good condition.

The crosswalks do not have continental striping.[46] Most crossings have actuated pedestrian push buttons,[47] with the exception of a few signalized intersections with east-west pedestrian crossings along Century Boulevard.

[46] Continental crosswalks have higher visibility, the design of which consists of two-foot-wide longitudinal stripes (the two transverse lines are omitted), paired with a limit (stop) line setback from the crosswalk to reduce vehicular encroachment into the crosswalk.

[47] At locations where pedestrian activity is infrequent and pedestrian signal phasing is not warranted on a full-time basis, the use of pedestrian-actuated signals (i.e., push-buttons) may be justified. Actuation of the push-buttons may be used to extend the green phase to allow pedestrians sufficient crossing time.



0 150 300

Feet

Scale

Source: Fehr & Peers, August 2020

Prepared by: CDM Smith, October 2020

LAX Airfield and Terminal Modernization Project

Existing CTA Roadway System

Figure **4.8-6**

Existing Bicycle Facilities

The City of Los Angeles 2010 Bicycle Plan[48] documents existing bicycle facilities in the vicinity of the airport. Class I Bikeways (Bike Path) provide an exclusive paved right-of-way separated from the street or highway. Class II Bikeways (Bike Lane) provide a striped and signed bike lane for one-way travel on a street or highway. Class III Bikeways (Bike Route) provide for a shared use of the roadway with posted signage for bicycle use which can include "sharrow" pavement markings.[49] **Figure 4.8-7** shows the existing designated bicycle facilities.

City of Los Angeles Mobility Plan 2035 has identified future planned bicycle facilities along segments of Lincoln Boulevard, South La Tijera Boulevard, Westchester Parkway, and Manchester Avenue in the vicinity of the Project area. In addition, the LAX Landside Access Modernization Program includes additional modifications to the bike facilities in the Project area including removing existing bike lane on 96th Street between new Jetway Boulevard and Airport Boulevard and construction of a combination bike lane and multi-use paths for shared use by pedestrians and bicyclists. Bike facilities will include: bike lanes on Westchester Boulevard from new Jetway Boulevard to Airport Boulevard and on Airport Boulevard from Arbor Vitae Street to Century Boulevard; striped bike paths along new Jetway Boulevard from Arbor Vitae Street to Century Boulevard and along new 94th Street from new Jetway Boulevard to Airport Boulevard; and a multi-use path on the south side of Century Boulevard between Airport Boulevard and Aviation Boulevard, continuing north on the west side of Aviation Boulevard and turning west along the south side of Arbor Vitae Street to La Cienega Boulevard.

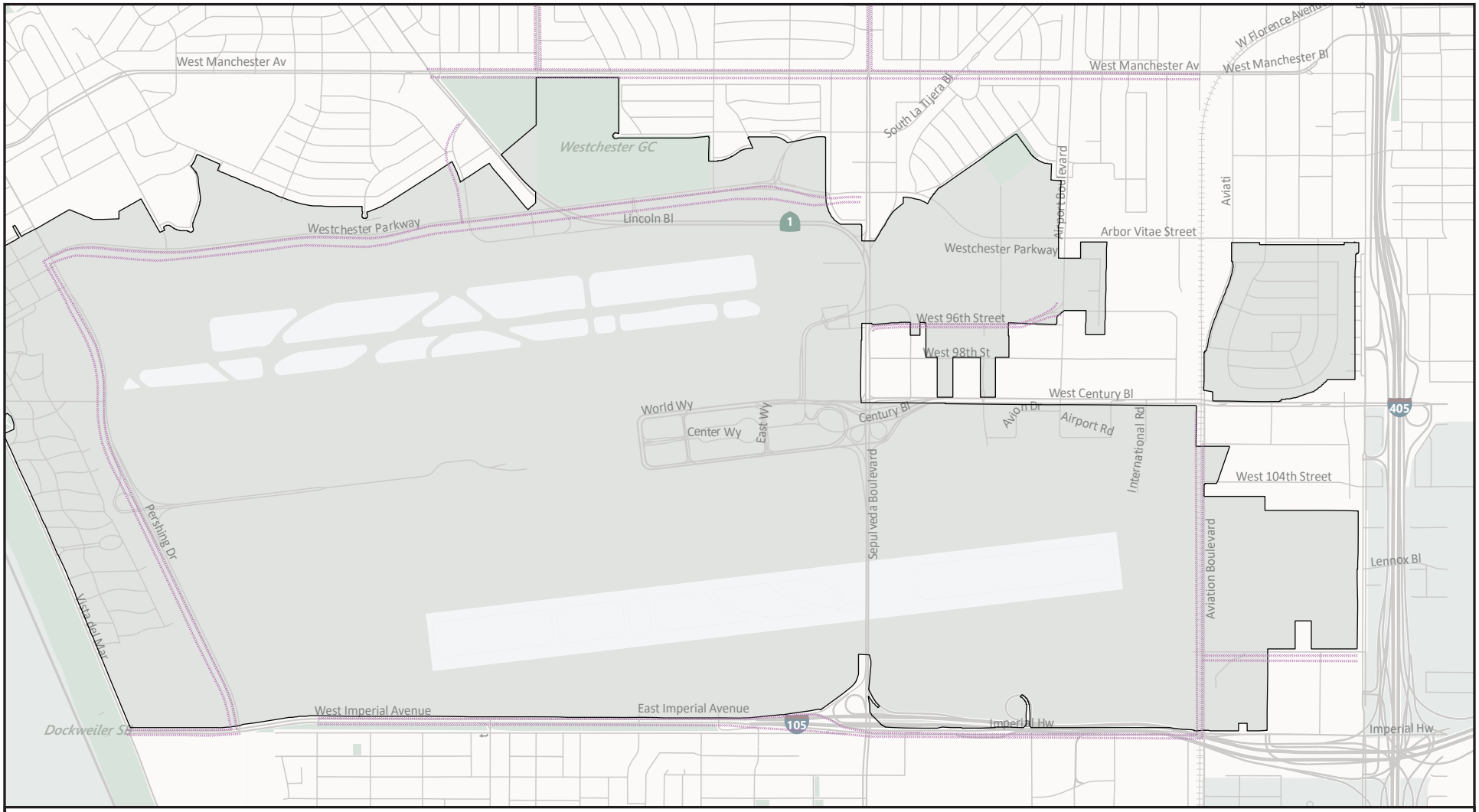
Existing Transit Conditions

Fifteen bus lines currently serve the LAX City Bus Center and the Metro Green Line Aviation/LAX Station. Seven bus lines are operated by Metro, two bus lines are operated by the Culver City Bus (CC), two bus lines are operated by Santa Monica Big Blue Bus (SM), two bus lines are operated by LADOT Commuter Express (CE), one bus line is operated by Torrance Transit (TT), and one bus line is operated by the City of Redondo Beach – Beach Cities Transit (BCT). In addition, the LAX FlyAway serves the CTA. **Figure 4.8-8** shows the routes for these 15 bus lines and the Metro Green Line. These transit lines are described in **Appendix G.3**, *Existing Transit System*.

In addition to these direct routes, there are dozens of other transit lines that connect to the Metro Green Line and are, therefore, accessible to LAX via one transfer at a Metro Green Line station. These transit lines are shown in **Figure 4.8-9**.

[48] City of Los Angeles, Department of City Planning, *2010 Bicycle Plan – A component of the City of Los Angeles Transportation Element*, adopted March 1, 2011. Available: https://planning.lacity.org/odocument/1378be7a-c7e2-4941-b2e2-937f929c17c2/Bicycle%20Plan%20-%202010.pdf.

[49] A "sharrow" is a road marking in the form of two inverted V-shapes above a bicycle, indicating which part of a road should be used by cyclists when the roadway is shared with motor vehicles.



0 0.6 Miles
Scale

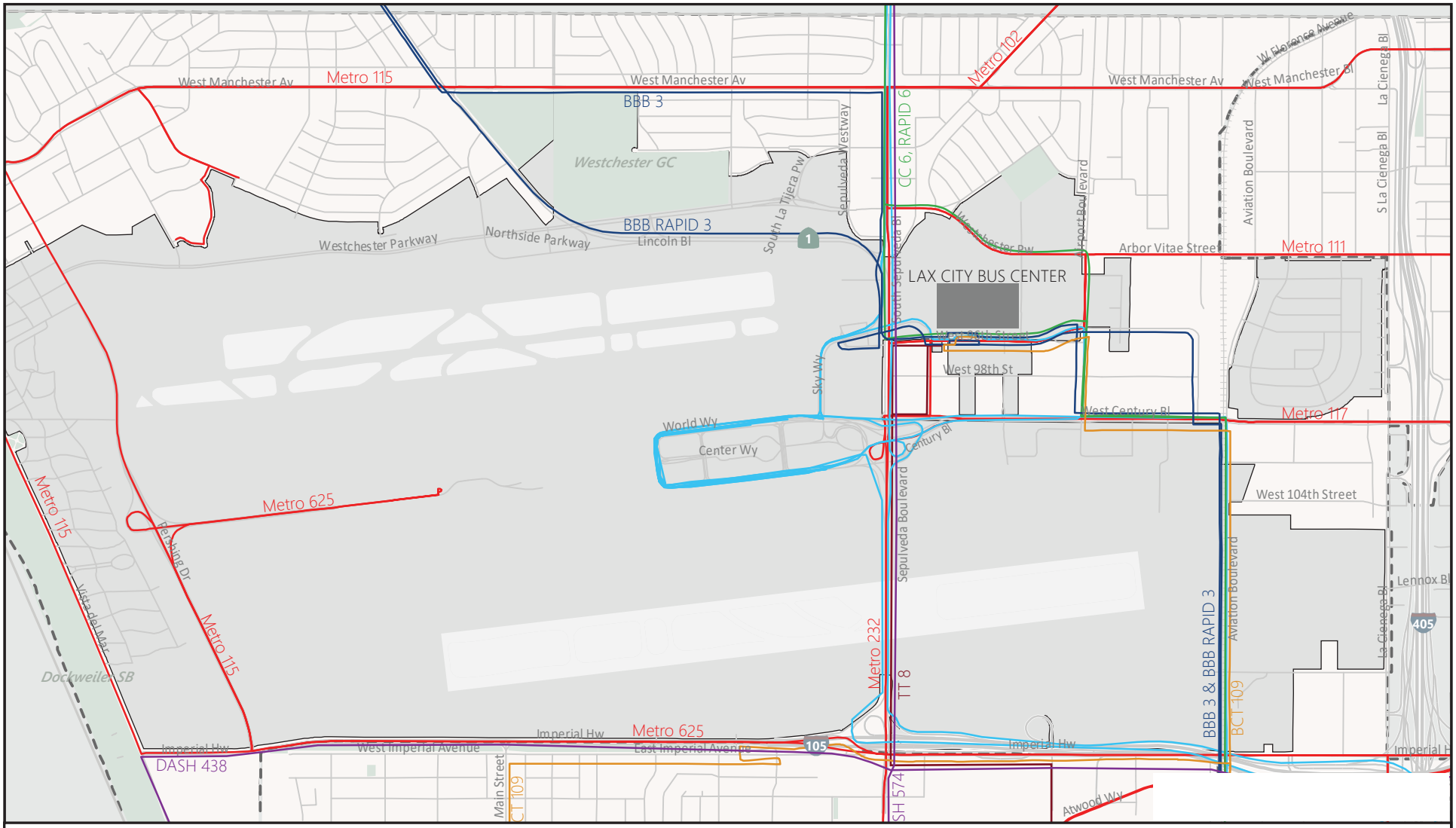
Sources: City of Los Angeles Bicycle Plan; Fehr & Peers, August 2020
Prepared By: CDM Smith, October 2020

Legend

- Existing Bike Lane
- LAX Property Boundary

Note:
Existing bike lane on W. 96th Street will be removed with the implementation of the LAX Landside Access Modernization Program.

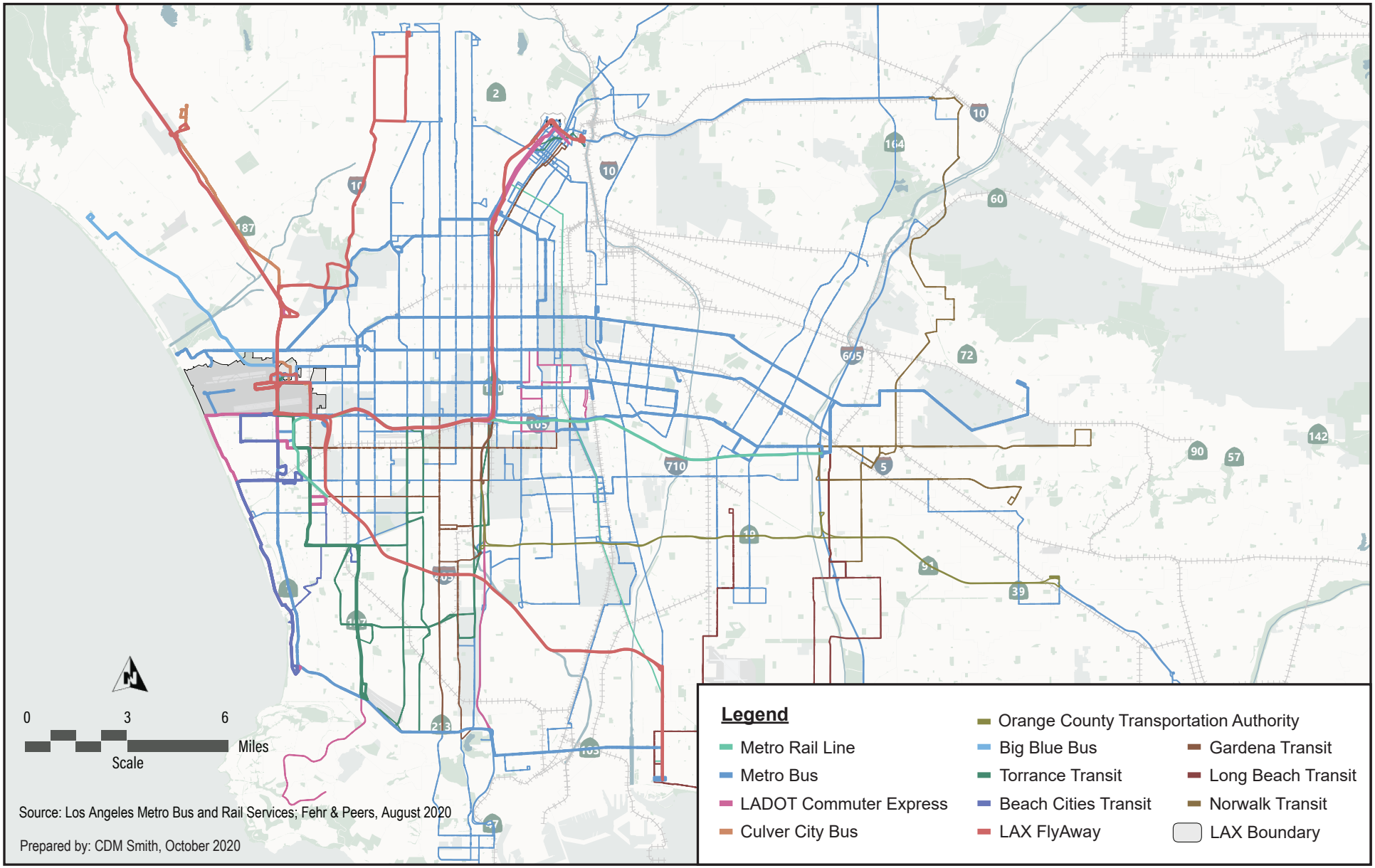
LAX Airfield and Terminal Modernization Project	Existing Bicycle Facilities	Figure **4.8-7**



LAX Airfield and Terminal Modernization Project

Existing Local Transit Connections to LAX and Metro LAX/Aviation Station

Figure **4.8-8**



LAX Airfield and Terminal Modernization Project

Existing Regional Transit Connections to LAX and Metro LAX/Aviation Station

Figure **4.8-9**

These two transit figures show there is a robust transit network serving the LAX area, although for many of the area transit trips to be completed, connections to other transit lines via one or more transfers are required. Furthermore, Metro is constructing the Metro Crenshaw/LAX Line that will extend from the existing Metro Exposition Line at Crenshaw and Exposition Boulevards and travel 8.5 miles south to connect with the Metro Green Line at the Aviation/LAX Station. The Metro Crenshaw/LAX Line is projected to be completed and commence operations in 2021. As part of the Metro Crenshaw/LAX Line, a station will be located near the intersection of Aviation Boulevard and Arbor Vitae Street. The Airport Metro Connector (AMC) station will serve LAX and its planned facilities, particularly those approved as part of the LAX Landside Access Modernization Program including the APM, the ITFs, and the CONRAC, along with related roadway improvements, bikeway improvements, and pedestrian improvements, all of which would support and complement transit services in the local area. Metro will construct this new multimodal transportation center to connect LAX to the regional bus and transit system, including at-grade light rail transit (LRT) platforms, bus plaza, bicycle hub, pedestrian plaza, passenger vehicle pick-up and drop-off area, and Metro transit center/terminal building ("Metro Hub") to connect passengers between the multiple transportation modes. Construction of the AMC transit station is expected to be completed in 2023/24.

4.8.3.2.2 Existing VMT

The majority of airport passenger vehicle trips start or end directly at the CTA. However, to estimate total passenger VMT, indirect trips to the CTA via rental car facilities, nearby hotel shuttles, and other major off-airport parking lots were also included. LAWA annually publishes a traffic generation report for LAX that includes all trips associated with LAX and its facilities.[50] These vehicle trips include all hotels and rental car shuttles, on-airport parking, off-airport parking, employee parking, cargo facilities, and rental car facilities. According to posted statistics for LAX,[51] the peak months for roadway traffic accessing the CTA are typically August and July. Therefore, for this Project, existing airport daily trip generation was estimated for a Friday in August (referred to as the "Design Day"). Trips entering and exiting the CTA are recorded and counted using LAWA's TRAVIS and loop counts. The trip generation of the remaining LAX facilities, such as the cargo area and the West Aircraft Maintenance Area, was compiled from driveway counts collected as part of the annual surveys. Additional 24-hour traffic counts at selected driveways to various airport-related facilities were also collected during August 2019 (Figure 4.8-3).

Table 4.8-1 shows the summary of daily inbound and outbound airport trip generation for the Design Day. Passenger and employee vehicle trips at CTA parking structures were disaggregated based on automated parking data obtained for the month of August 2019.

[50] The annual Traffic Generation Reports are available on LAWA's website at: https://www.lawa.org/lawa-our-lax/studies-and-reports/traffic-generation-report. The *Traffic Generation Report – Los Angeles International Airport/August 2018*, summarizes the number of trips generated by LAX for August 2018.

[51] City of Los Angeles, Los Angeles World Airports, *Statistics for LAX webpage*. Available: https://www.lawa.org/lawa-investor-relations/statistics-for-lax/volume-of-air-traffic.

Table 4.8-1
Existing Daily Trip Generation

Facility	Inbound				Outbound			
	Cars*	Trucks	Van/ Bus	Total	Cars*	Trucks	Van/ Bus	Total
CTA - Passenger	96,149	1,147	5,690	102,986	99,713	1,147	5,702	106,562
CTA - Employee/Crew	2,091	-	883	2,974	2,091	-	883	2,974
Cargo Facilities / World Way West**	16,705	5,681	170	22,556	16,887	5,822	178	22,887
Employee Parking Lots**	6,060	-	-	6,060	7,690	-	-	7,690
Rental Car and Other off-site Passenger Parking Facilities	17,896	1,104	1,650	20,650	17,516	1,635	1,638	20,789
Total Vehicle Trips	138,901	7,932	8,393	155,226	143,897	8,604	8,401	160,902

Source: **Appendix G.5**, *Trip Generation for Travel Demand Model*, of this EIR.

Notes:
* TNC's included under the car mode.
** Includes a reasonable representation of all LAX employee vehicle trips, but may not represent 100 percent of the airport employment.

Some of the parking lots in the area, such as the Joe's Parking facility[52] located south of 96th Street, are shared between airport passengers and other adjacent businesses' employees and visitors. All these trips were allocated to passengers since there is no way to accurately disaggregate the trips, and airport passengers represent, by far, the highest share. It is important to note that total trips and related VMT for these facilities are included in the LAX travel demand model.

The LAX travel demand model was used to estimate employee and passenger VMT. Total passenger VMT and VMT per employee for existing (2019) conditions is presented in **Table 4.8-2** and **Table 4.8-3**. It should be noted that while Table 4.8-2 and Table 4.8-3 present the VMT for existing (2019) conditions, they do not serve as the baseline used to measure the future (2028) VMT impacts of the proposed Project. As described earlier in Section 4.8.1.1, the Projected Future Conditions Baseline (2028) serves as the basis for measuring VMT impacts. As further described below in Section 4.8.3.3, the Projected Future Conditions Baseline (2028) accounts for the fact that key elements of the LAX Landside Access Modernization Program would be completed and in operation prior to 2028, the analysis horizon year for the proposed Project. Those ground transportation system improvements will materially affect the VMT characteristics of travel to and from LAX independent of the proposed Project. More specifically, those improvements will reduce VMT overall. Use of the Projected Future Conditions Baseline (2028) serves to isolate the changes in VMT that are directly attributable to the proposed Project, which would not be possible if existing (2019) conditions were used as the baseline. VMT impact conclusions regarding the Project's impacts in 2028 that are drawn based on a comparison to existing (2019) conditions would be misleading. This is evident in looking ahead to the information presented later in this section, such as the employee VMT data in Table 4.8-10, whereby the VMT per employee in 2019 is 25.2 and it drops to 23.9 in 2028 at buildout of the proposed Project. That comparison would suggest that implementation of the Project, with the addition of new employees, would result in a decrease of 1.2 VMT per employee. However, the VMT per employee in 2028 for the Projected Future Conditions Baseline (2028) is 24.0, which accounts for the VMT reduction benefits attributable to LAX Landside Access Modernization Program, and the VMT reduction directly associated with the proposed Project's new employees, is

[52] Joe's Parking will be redeveloped as part of the LAX Landside Access Modernization Program; however, the facility was present during the time the trip generation was developed for the study.

actually only 0.1 VMT per employee. As such, the VMT information presented in this section regarding existing (2019) conditions is for general information purposes only and is not the baseline for measuring VMT impacts.

It should also be noted that, as indicated earlier in Section 4.8.2.2.3, the measurement of VMT for employees is on a per employee basis, while the measurement of VMT for passengers is on a total VMT basis; hence, two separate tables are provided below.

Table 4.8-2
Summary of Existing (2019) Passenger VMT

Measure	Value
Total Passenger VMT	6,581,811
Source: Fehr and Peers, 2020.	

Table 4.8-3
Summary of Existing (2019) VMT per Employee

Measure	Value
VMT per Employee	25.2
Source: Fehr and Peers, 2020.	

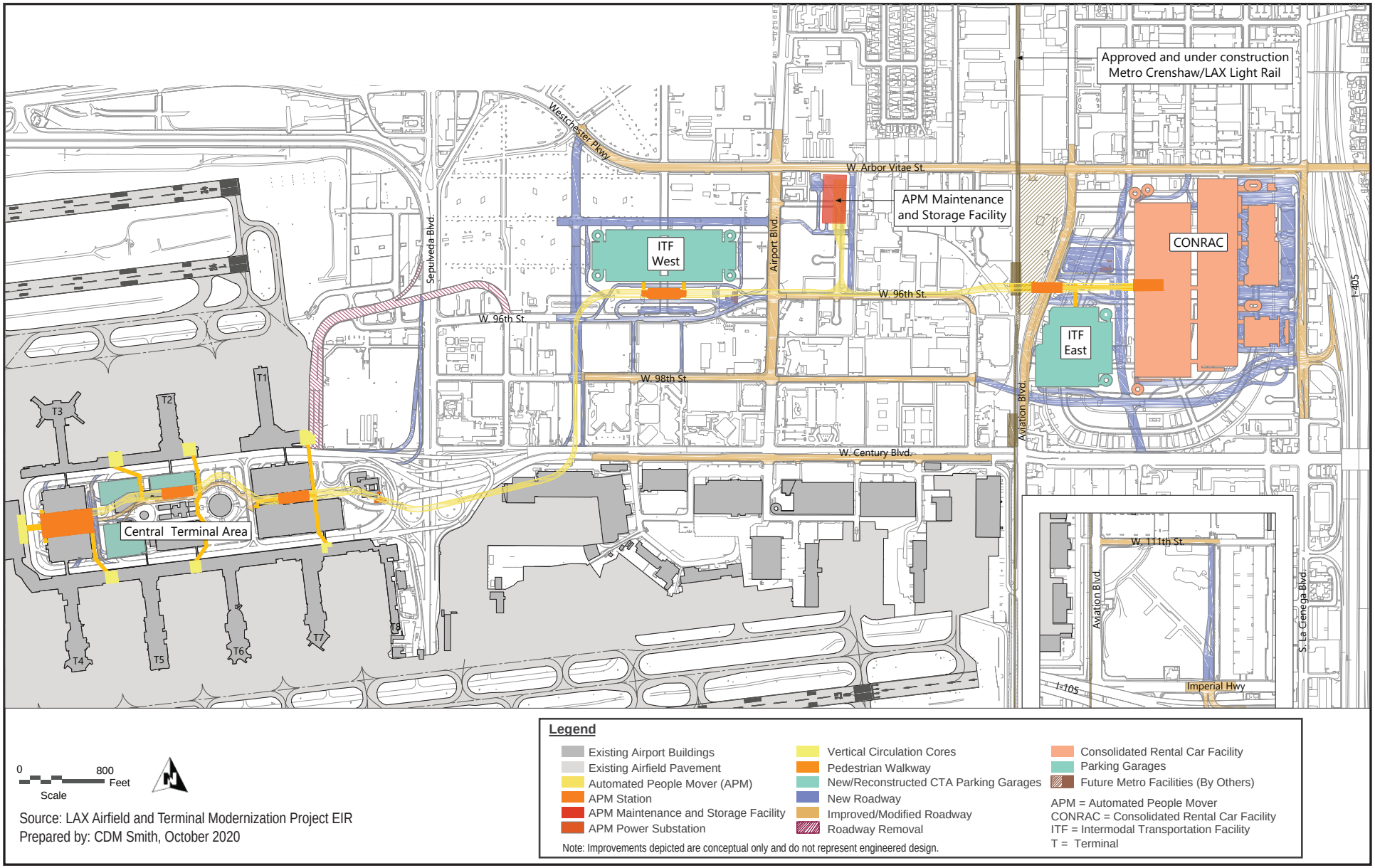
4.8.3.3 Projected Future Conditions Baseline (2028)

4.8.3.3.1 Key Components of Projected Future Conditions Baseline (2028)

As described in the beginning of this chapter (Environmental Impact Analysis), by the time the proposed Project is completed in 2028, Phase 1 of the LAX Landside Access Modernization Program, including the APM, ITF East, ITF West, CONRAC, and Phase 1 roadways will be completed. Metro's Crenshaw/LAX Line and AMC 96th Street Transit Station will also be completed, including an interface between the station and the LAX Landside Access Modernization Program facilities. These improvements will substantially change the surface transportation characteristics around the airport, including VMT. As described in Section 4.8.1, for these reasons, Projected Future Conditions in 2028 serve as the baseline for evaluating the transportation impacts of the proposed Project. This section identifies the components of the Projected Future Conditions Baseline (2028).

LAX Landside Access Modernization Program Improvements

The LAX Landside Access Modernization Program consists of four major elements. These elements include (1) an elevated APM system; (2) two ITFs (ITF East and ITF West); (3) a CONRAC; and (4) a comprehensive series of roadway improvements, as further described below). This system will also connect LAX with Metro's AMC 96th Street Transit Station, to be located at 96th Street/Aviation Boulevard. These future LAX Landside Access Modernization Program components, including the Phase 1 roadway system, are illustrated in **Figure 4.8-10**.



LAX Airfield and Terminal Modernization Project

LAX Landside Access Modernization Program Components and Phase 1 Roadways

Figure
4.8-10

Roadway Network Improvements added to the LAX Projected Future Conditions Baseline (2028) Model

The SCAG 2016-2040 RTP/SCS network was used to develop the roadway network for the Projected Future Conditions Baseline (2028) scenario. The travel model represents the roadway and transit networks from a regional perspective. Some of the network improvements that are identified in the 2016-2040 RTP/SCS will be completed after year 2028; these improvements were removed from the network and not included in the LAX Projected Future Conditions Baseline (2028) model.

LAX Landside Access Modernization Program roadway improvements will include, among others, new roadway segments, additional lanes, realignment of segments of some existing roads, restriping, new or realigned driveways, road closures, intersection improvements, and sidewalk improvements. A detailed list of these roadway improvements is available on LAWA's website.[53]

2028 Land Use Growth

As described in Section 4.8.2.2, to estimate the future growth and change in traffic for 2028 conditions, a future year 2028 Project Travel Demand Model was developed with updated model SED and transportation networks. SED for year 2028 was interpolated based on the 2016 and 2040 City of Los Angeles TDF Model. The final SED for TAZs within five miles of the Project site were reviewed for any growth related to specific future developments (see discussion of cumulative projects below). The SED within TAZs that were created for LAX were further reviewed/adjusted to represent the LAX Landside Access Modernization Program Phase I improvements.

Cumulative Projects

The future traffic forecasts also include the effects of specific development projects (cumulative projects), expected to be implemented in the vicinity of the proposed Project site prior to the buildout date (2028) of the proposed Project. Cumulative LAX projects are identified in Table 3-1 in Chapter 3, *Overview of Project Setting*. In addition, cumulative projects in surrounding jurisdictions were identified for incorporation into the Projected Future Conditions Baseline (2028) Model.

The list of non-airport cumulative projects was prepared based on data provided by LADOT, the City of Los Angeles Department of City Planning, the City of Culver City, the City of El Segundo, the City of Gardena, the City of Hawthorne, the City of Inglewood, Los Angeles County, as well as approved traffic studies in the vicinity of the Project site, websites, and field observations. A total of 123 cumulative projects were identified and the growth associated with these projects was cross checked with the travel model data and adjustments were made to accommodate the growth where necessary. Fifty-three of these projects are within the City of Los Angeles (including LAWA projects). Detailed information about the locations and specifications of these cumulative projects is provided in **Appendix G.7**, *Cumulative Projects*.

[53] City of Los Angeles, Los Angeles World Airports, *Final Environmental Impact Report for Los Angeles International Airport (LAX) Landside Access Modernization Program*, (SCH 2015021014), Appendix O – Off-Airport Traffic Study, page 94, February 2017. Available: https://www.lawa.org/en/connectinglax/automated-people-mover/documents.

Major Transit Projects

The following major transit projects will be completed before year 2028 and are included as part of the Projected Future Conditions Baseline (2028):

The Metro Crenshaw/LAX Line (currently under construction and projected to open in 2021) will extend from the existing Metro Exposition Line at Crenshaw and Exposition Boulevards and end at Aviation/Century Boulevard. The Line will travel 8.5 miles to the Metro Green Line and will serve the cities of Los Angeles, Inglewood and El Segundo, and portions of unincorporated Los Angeles County. The new Metro Rail extension will offer an alternative transportation option to access LAX.

Airport Metro Connector 96th Street Transit Station will be a new major transit hub connecting the Metro Crenshaw/LAX Line and Metro Green Line and a number of bus routes with the LAX APM. This station will serve as a true "Multi-Modal Transit Gateway" to LAX. The AMC 96th Street Transit Station is scheduled to open in late 2023/early 2024.

4.8.3.3.2 Projected Future Conditions Baseline (2028) VMT

Table 4.8-4 shows the summary of daily inbound and outbound airport trip generation for the design day. The estimated 2028 vehicle trip generation used to estimate the VMT for the Projected Future Conditions Baseline (2028) is based on following assumptions:

- LAX Landside Access Modernization Program Phase I project elements will be completed and in operation.
- Passenger and employee vehicle trips at CTA structure parking lots will be disaggregated based on similar ratios observed in existing data from August 2019. In other words, the 2019 data was used to provide the basis for the assumptions on where trips would start/end at a variety of airport facilities.
- Cargo facilities and other off-airport passenger and employee trip generation are assumed to grow at an annual rate of 1.6 percent.[54]
- All hotel and off-airport parking related shuttles to/from CTA are assumed to be moved to the ITF facilities.
- There will be no rental car shuttles and buses in the CTA because the majority of rental car facilities will be transferred to CONRAC, and passengers will use the APM to access the CTA. There will also be no rental car trips from/to all facilities along Century Boulevard, since these trips will be part of ITF East/CONRAC trip generation. The current rental car facilities also generate a small number of truck trips. These truck origins/destinations will stay at their original rental car location, as these companies are expected to use these facilities for staging and maintenance.

[54] This rate is estimated based on annual average of airport operations and the MAP growth rate.

Table 4.8-4
Projected Future Conditions Baseline (2028) Daily Trip Generation

Facility	Inbound				Outbound			
	Cars*	Trucks	Van/Bus	Total	Cars*	Trucks	Van/Bus	Total
CTA - Passenger	93,427	-	82	93,509	95,982	-	82	96,064
CTA - Employee/Crew	2,035	-	672	2,707	2,035	-	672	2,707
ITF East - Passenger	13,988	-	1,472	15,460	13,988	-	1,472	15,460
IFT West - Passenger	38,363	-	6,972	45,335	39,601	-	7,000	46,601
Cargo Facilities / Employee Parking World Way West**	17,512	6,152	104	23,768	17,737	6,305	178	24,220
Employee Parking Lots (Including employee parking near the ITF West) **	7,809	-	636	8,445	9,519	-	562	10,081
Rental Car and Other Passenger Parking Facilities (Private and Public)	5,115	781	1,526	7,422	5,330	1,144	1,498	7,972
Total Vehicle Trips	178,249	6,933	11,464	196,646	184,192	7,449	11,464	203,105

Source: **Appendix G.5**, *Trip Generation for Travel Demand Model,* of this EIR.

Notes:
* TNCs included under the car mode.
** Includes a reasonable representation of all LAX employee vehicle trips, but may not represent 100 percent of the airport employment.

The LAX travel demand model was used to calculate the total passenger VMT and VMT per employee for the Project Future Conditions Baseline (2028). This information is presented in **Tables 4.8-5** and **4.8.6**.

Table 4.8-5
Summary of Projected Future Conditions Baseline (2028) Passenger VMT

Measure	Projected Future Conditions Baseline (2028)
Total Passenger VMT	8,676,209
Source: Fehr and Peers, 2020.	

Table 4.8-6
Summary of Projected Future Conditions Baseline (2028) VMT per Employee

Measure	Projected Future Conditions Baseline (2028)
VMT per Employee	24.0
Source: Fehr and Peers, 2020.	

4.8.4 Thresholds of Significance

The proposed Project was evaluated for potential significant transportation impacts using the criteria described below consistent with Section 15064.3 and Appendix G of the State CEQA Guidelines.

Because the proposed Project at LAX involves a unique land use, specific impact thresholds were developed in coordination with LADOT, and in accordance with available State guidance.[55] As described in the VMT methodology section above, these thresholds focus on three main types of VMT created by the proposed Project: (1) VMT per employee; (2) net change in total passenger VMT; and (3) short-term and long-term induced VMT. Two additional thresholds, related to consistency with programs, plans, ordinances, and policies, and to hazards associated with a geometric design feature, were also evaluated.

A significant transportation impact would occur if the proposed Project would:

Threshold 4.8-1 Conflict with a program, plan, ordinance, or policy addressing the circulation system (including transit, roadways, bicycle, and pedestrian facilities) that was adopted to protect the environment.

Threshold 4.8-2 Generate VMT per employee exceeding 15 percent below the Projected Future Conditions Baseline (2028) VMT per employee.

This threshold only applies to VMT associated with commute trips by workers employed at LAX. The Projected Future Conditions Baseline (2028) VMT per employee is 24.0. Therefore, the threshold for VMT per employee is 20.4.

Threshold 4.8-3 Increase total passenger VMT over the Projected Future Conditions Baseline (2028).

This threshold only applies to VMT generated by passengers at LAX.

Threshold 4.8-4 Induce substantial additional VMT compared to the Projected Future Conditions Baseline (2028).

Threshold 4.8-5 Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses.

4.8.5 Project Impacts

As described in Section 4.8.2, to evaluate transportation impacts, trip generation and VMT were determined for passengers and employees. The following tables show the trip generation and VMT associated with the proposed Project in 2028. These tables serve as the basis for the impacts analysis that follows.

Proposed Project Daily Airport Trip Generation

The total number of passengers with implementation of the proposed Project would be the same as under the Projected Future Conditions Baseline (2028); however, about 11.5 percent of CTA trips would be shifted to Terminal 9. Total vehicle trips related to the ITF East and ITF West facilities would also be very similar to the Project Future Conditions Baseline.

An estimated 4,700 new employees would work daily (across three shifts) at Concourse 0 and Terminal 9. The mode share for these new employees was estimated based on 2016 employee survey results.[56] The

[55] State of California, Governor's Office of Planning and Research, *Revised Proposal on Updates to the CEQA Guidelines on Evaluating Transportation Impacts in CEQA – Implementing Senate Bill 743 (Steinberg, 2013)*, January 20, 2106. Available: http://www.opr.ca.gov/docs/Revised_VMT_CEQA_Guidelines_Proposal_January_20_2016.pdf.

[56] City of Los Angeles, Los Angeles World Airports, *Employee Travel Study of Los Angeles International Airport,* prepared by Point C, updated July 2016.

Walk/Bike/Transit mode share and Average Vehicle Occupancy (AVO) were presented as a range in the survey; in order to be conservative and account for maximum potential Project VMT impacts, the lower end of the range was used. For example, based on information from the LAWA vanpool program, the vanpool occupancy is in the range of six to eight people per van and two to three people per carpool. For purposes of the EIR analysis, the VMT calculations for Project employees assumed six people per van and two people per car. Considering the AVO for each mode, the total new daily vehicle trips generated by these employees would be approximately 8,190, as shown in **Table 4.8-7**. It should be noted that LAX Landside Access Modernization Program and other ongoing LAWA programs are aimed at improving the mode share beyond the 2018 employee survey results and ultimately reducing VMT further.

Table 4.8-7
Concourse 0 and Terminal 9 Employee Trip Generation Summary

Mode	Mode Share	Average Vehicle Occupancy (AVO)*	Number of Employees	Total Daily Vehicle Trip Generation
Vanpool	5.5%	6	259	86
Carpool	4.6%	2	216	216
Walk/Bike/Transit/ Metro Bus or Rail	6.0%	-	282	-
Drive Alone	83.9%	1	3,944	7,888
Total	100.0%	-	4,700	8,190

Source: City of Los Angeles, Los Angeles World Airports, *Employee Travel Study of Los Angeles International Airport,* prepared by Point C, updated July 2016 and **Appendix G.5**, *Trip Generation for Travel Demand Model*, of this EIR.

Note:
*AVO = average vehicle occupancy

Table 4.8-8 shows the summary of daily inbound and outbound airport trip generation for the design day. The 2028 vehicle trip generation with implementation of the proposed Project is estimated based on the following assumptions:

- All assumptions related to the Project Future Conditions Baseline scenario trip generation were applied to the proposed Project scenario
- Passenger and employee vehicle trips at CTA structure parking lots are disaggregated based on CTA automated parking data during the month of August 2019
- New employees at Concourse 0 and Terminal 9 would use the employee parking lot adjacent to the ITF West and nearby APM station (i.e., Employee Lot South)

Table 4.8-8
Total LAX Daily Trip Generation with the Project

Facility	Inbound				Outbound			
	Cars*	Trucks	Van/Bus	Total	Cars*	Trucks	Van/Bus	Total
CTA - Passenger	82,679	-	74	82,753	84,960	-	74	85,034
Terminal 9 - Passenger	10,755	-	8	10,763	11,008	-	8	11,016
CTA and Terminal 9 Employee/Crew	2,037	-	675	2,712	2,037	-	675	2,712
ITF East - Passenger	13,993	-	1,467	15,460	13,993	-	1,467	15,460
IFT West - Passenger	38,366	0	6972	45,338	39,589	0	7,000	46,589
Cargo Facilities/ Employee Parking World Way West**	17,512	6,152	104	23,768	17,737	6,305	178	24,220
Employee Parking Lots (including employee parking near the ITF West)	11,886	-	636	12,522	13,640	-	562	14,202
Rental Car and Other Passenger Parking Facilities	5,115	781	1,526	7,422	5,330	1,144	1,498	7,972
Total Vehicle Trips	182,343	6,933	11,462	200,738	188,293	7,449	11,462	207,204

Source: **Appendix G.5**, *Trip Generation for Travel Demand Model*, of this EIR.

Notes:
* TNC's included under the car mode.
** Includes a reasonable representation of all LAX employee vehicle trips, but may not represent 100 percent of the airport employment.

As shown in Table 4.8-8, with the addition of the proposed Project, the total daily airport inbound and outbound passenger/employee trips are respectively 200,738 and 207,204. This amounts to an overall increase in trip generation over the Projected Future Conditions Baseline (2028) of approximately 2 percent.

A comparison of total LAX daily trip generation under existing conditions, Projected Future Conditions Baseline (2028), and the proposed Project is provided in **Table 4.8-9**.

Table 4.8-9
Total Airport Daily Trip Generation for Existing Conditions, Projected Future Conditions Baseline (2028), Proposed Project (2028)

Trips	Existing Conditions (2019)	Projected Future Conditions Baseline (2028)	Proposed Project (2028)
Inbound	155,226	196,647	200,738
Outbound	160,902	203,105	207,204
Total	316,128	399,752	407,942

Source: Fehr and Peers, 2020.

Proposed Project VMT

As described in Section 4.8.2.2.1, the Project Travel Demand Model was used to calculate the total passenger VMT and VMT per employee for the proposed Project. This information is presented in **Table 4.8-10**, along with VMT for existing conditions and Projected Future Conditions Baseline (2028).

Table 4.8-10
Summary of Projected VMT for Existing Conditions, Projected Future Conditions Baseline (2028), and Proposed Project (2028)

Measure	Existing Conditions (2019)	Projected Future Conditions Baseline (2028)	Proposed Project (2028)
Total Passenger VMT	6,581,811	8,676,209	8,708,995
VMT per Employee	25.2	24.0	23.9
Short-term Induced VMT	-	-	3,306
Long-term Induced VMT	-	-	18,220
Source: Fehr and Peers, 2020.			

4.8.5.1 Impact 4.8-1

Summary Conclusion for Impact 4.8-1: The proposed Project would not conflict with a program, plan, ordinance, or policy addressing the circulation system (including transit, roadways, bicycle, and pedestrian facilities) that was adopted to protect the environment. This would be a be *less than significant impact.*

4.8.5.1.1 Project Impacts

A review was conducted to determine whether the proposed Project would conflict with a transportation-related City or regional plan, program, ordinance, or policy that was adopted to protect the environment. Transportation policies or standards adopted to protect the environment are those that support multimodal transportation options and a reduction in VMT. A project would not be shown to result in an impact merely based on whether a project would not implement an adopted plan, program, ordinance, or policy. Rather, it is the intention of this threshold test to ensure that a proposed project does not conflict with nor preclude the City from implementing adopted plans, programs, ordinances, or policies.

This evaluation was conducted by reviewing the relevant City and regional plans, programs, ordinances, and policies. A summary of the plans, programs, ordinances, and policies reviewed, and the general conclusions of the review, are provided in **Table 4.8-11** and **Table 4.8-12**. Table 4.8-11 includes the City and regional documents and ordinances that establish the regulatory framework and identifies whether or not the Project would be inconsistent with policies or standards in these documents that address the circulation system. Table 4.8-12 includes a structured approach with guiding questions to address consistency with relevant transportation-related plans, programs, ordinances, and policies. Under CEQA, a project is considered consistent with an applicable plan if it is consistent with the overall intent of the plan and would not preclude the attainment of its primary goals. A project does not need to be in perfect conformity with each and every policy. Finally, any inconsistency with an applicable policy, plan, or regulation is only a significant impact under CEQA if the policy, plan, or regulation was adopted for the purpose of avoiding or mitigating an environmental effect and if the inconsistency itself would result in a direct physical impact on the environment.

Table 4.8-11
Proposed Project's Consistency with
Applicable City and Regional Plans, Programs, Ordinances, or Policies

Plan, Program, Ordinance, or Policy	Proposed Project Consistency
SCAG 2020-2045 RTP/SCS and RTIP	
The SCAG 2020-2045 RTP/SCS and the RTIP identify proposed new regional transportation systems. The RTP/SCS identifies that the proposed Project would address ground access at LAX and complement the future APM. The specific roadway improvements associated with the proposed Project are not yet included in the RTP/SCS given that those improvements along with the rest of the Project elements have not yet been approved. In conjunction with future Project approval, roadway improvements associated with the Project can be integrated into the RTP/SCS, including the Transportation System Project List and the RTIP, as appropriate. This process is similar to what occurred with the ground transportation improvements associated with the LAX Landside Access Modernization Program, which is also acknowledged in the SCAG 2020-2045 RTP/SCS.	While the ATMP Project is included in the RTP/SCS, the proposed Project roadway improvements are not yet identified or included in the 2020-2045 RTP/SCS road network or the RTIP, as they, along with the rest of the Project, have not been approved. Subject to receiving necessary approvals, LAWA will inform Metro and SCAG of the revisions to the road network in the immediate vicinity of LAX, which, in turn can be integrated into the RTP/SCS. The environmental effects of those roadway improvements including, but not limited to, VMT and GHG, have been addressed and accounted for in this EIR (see Section 4.8, *Transportation,* and Section 4.4, *Greenhouse Gas Emissions*). The Project's proposed roadway improvements would not be inconsistent with the RTP/SCS**.**
City of Los Angeles General Plan Framework	
Objective 3.1 – Accommodate a diversity of uses that support the needs of the City's existing and future residents, businesses, and visitors	The proposed Project would not be inconsistent with Objective 3.1 and its respective policies. The Project includes transportation, office and retail uses to accommodate those traveling to or from, and those working at, LAX.
Objective 3.10 – Reinforce existing and encourage the development of new regional centers that accommodate a broad range of uses that serve, provide job opportunities, and are accessible to the region, are compatible with adjacent land uses, and are developed to enhance urban lifestyles	The proposed Project would not be inconsistent with Objective 3.10, and specifically Policy 3.10.2 (Accommodate and encourage the development of multi-modal transportation centers, where appropriate). The Project includes facilities to accommodate pedestrians, as well as those using the APM to access the CTA.

Table 4.8-11
Proposed Project's Consistency with
Applicable City and Regional Plans, Programs, Ordinances, or Policies

Plan, Program, Ordinance, or Policy	Proposed Project Consistency
Los Angeles Mobility Plan 2035	
Policy 2.1: Design, plan, and operate streets to serve multiple purposes and provide flexibility in design to adapt to future demands. Policy 2.5: Transit Network — Improve the performance and reliability of existing and future bus service. Policy 3.9: Increase network access.	The proposed Project would not be inconsistent with the policies relating to the circulation system. Street cross-sections would not be inconsistent with designations outlined within the Plan, and the proposed Project would not be inconsistent with the goods movement. The proposed Project may require repositioning of two bus stops on 96th Street in conjunction with the proposed realignment of a portion of that street. Such repositioning of the bus stops, if needed, would be coordinated with the affected transit operator(s). Bus service in the area would continue and the Project would not be inconsistent with the Mobility Plan 2035 relative to transit. The proposed Project includes replacement of existing sidewalks along 96th Street as part of the realignment of that portion of 96th Street. As such, the Project would not be inconsistent with the Mobility Plan 2035 relative to pedestrian access. The proposed Project would require the removal of existing bicycle lanes on 96th Street; however the LAX Landside Access Modernization Program EIR included Figure 2-55, Proposed Amendment to Mobility Plan 2035 Bicycle Plan, which shows these bicycle facilities would be removed along 96th Street and an alternative connection would be provided by the construction of bike and multi-use paths in the vicinity. The Project's required removal of the bicycle lanes would not be inconsistent with the Mobility Plan 2035 as they will be replaced with an extensive bicycle network in the vicinity.
LAX Plan	
Goal 6 – Improve Ground Access to LAX	The proposed Project would not be inconsistent with, and would advance, Goal 6 and Circulation and Access Policy P9. Pedestrian facilities would provide access to Terminal 9 from the parking facility and adjacent terminals. Access would be provided to both Concourse 0 and Terminal 9 from APM stations.
Vision Zero Los Angeles	
Vision Zero Action Plan Vision Zero Corridor Plans	The proposed Project would not be inconsistent with the design standards of the City of Los Angeles, which is in line with Vision Zero Los Angeles. Although segments of Sepulveda Boulevard and Century Boulevard are designated as part of the City's HIN, none of these sections are on the list of Prioritized (targeted) Corridors as part of Vision Zero Los Angeles. The proposed Project would not preclude the City from implementing future planned improvements as part of Vision Zero Los Angeles.

Table 4.8-11
Proposed Project's Consistency with
Applicable City and Regional Plans, Programs, Ordinances, or Policies

Plan, Program, Ordinance, or Policy	Proposed Project Consistency
Century Boulevard Streetscape Plan	
The Plan includes planned streetscape improvements along the segments of Century Boulevard that are adjacent to proposed Project roadway improvements and Terminal 9.	The proposed roadway improvements, including the access to Terminal 9, are not identified in the Plan; therefore, the exact details of the implementation would vary slightly from the exhibits provided in the Plan. The improvements guidelines set forth in the Plan would be taken into account in the more detailed design of the proposed roadway improvements. Overall, the proposed Project would not be inconsistent with the overall intent of the plan to create a vibrant corridor and would not preclude the City from implementing the plan.
Citywide Design Guidelines	
Guideline 1: Promote a safe, comfortable and accessible pedestrian experience for all. Guideline 2: Carefully incorporate vehicular access such that it does not degrade the pedestrian experience. Guideline 3: Design projects to actively engage with streets and public space and maintain human scale.	The proposed Project would not be inconsistent with the Citywide Design Guidelines. Pedestrian access facilities would be provided connecting Concourse 0 and Terminal 9 to the APM system, to the new parking facility for Terminal 9, and to adjacent terminals.
City of Los Angeles Safety Element	
The Safety Element includes goals, objectives, and policies applicable to emergency services.	The proposed Project would not be inconsistent with the Safety Element. The project road improvements would be designed to City standards and provide access for emergency response vehicles.
Plan for a Healthy Los Angeles	
The plan includes policies directing several City departments to develop plans that promote active transportation and safety.	The proposed Project would not be inconsistent with the overall intent of the plan to provide a safe and efficient transportation system for all users.
Great Streets for Los Angeles/LADOT Strategic Plan	
The plan focuses on making the city safe, prosperous, and livable with a well-run government.	The proposed Project would not be inconsistent with the plan. The road improvements would not be inconsistent with the plan's goal of providing a system that supports the economy by connecting places.
Los Angeles Fire Department Strategic Plan 2018-2020	
The Strategic Plan focuses on nine goals and corresponding strategic actions that guide the Los Angeles Fire Department (LAFD).	The proposed Project would not be inconsistent with the plan. The Project would not be inconsistent with the plan's airport resource units that are allocated to the service delivery area of LAX.
Source: Fehr & Peers, 2020.	

Table 4.8-12
Guiding Questions to Address Proposed Project's Consistency with Transportation-Related City Plans, Programs, Ordinances, and Policies[1]

Question	Guiding Questions	Relevant Plans, Policies, and Programs	Evaluation
A. Mobility Plan 2035 Public Right of Way Classification Standards for Dedications and Improvements			
A.1	Does the project include additions or new construction along a street designated as a Boulevard I, and II, and/or Avenue I, II, or III on property zoned for R3 or less restrictive zone?	MP 2.1, 2.3, 3.2, and Mobility Plan 2035 Street Designations and Standard Roadway Dimensions	Yes, the proposed Project would include new construction along Sepulveda Boulevard and Century Boulevard (Boulevard I), 96th Street (Avenue II), 98th Street (Collector), and Vicksburg Avenue (Local Street). These road segments front property zoned for LAX (restrictive) and commercial (less restrictive).
A.2	If A.1 is yes, is the project required to make additional dedications or improvements to the Public Right of Way as demonstrated by the street designation?		No, no additional dedications or improvements to the Public Right of Way are required as street cross-sections of the proposed Project would not be inconsistent with designations and modifications in the Mobility Plan 2035 and the City of Los Angeles Complete Streets Design Guide. ▪ Sepulveda Blvd: Boulevard I ▪ Century Boulevard: Boulevard I (the Mobility Plan 2035 has this section modified to 133 ft of ROW and 124 ft of ROW) ▪ 96th Street: Avenue II ▪ 98th Street: Collector Source: City of Los Angeles Complete Streets Design Guide (Boulevard designations pages 37-39), NavigateLA.lacity.org.
A.3	If A.2 is yes, is the project making the dedications and improvements as necessary to meet the designated dimensions of the fronting street (Boulevard I, and II, or Avenue I, II, or III)?		Not applicable.
A.4	If the answer to A.3. is NO, is the project applicant asking to waive from the dedication standards? The following factors may contribute to determine if the dedication or improvement is necessary: Is the project site along any of the following networks identified in the City's Mobility Plan? ▪ Transit Enhanced Network ▪ Bicycle Enhanced Network		No, the project applicant is not asking to waive dedication standards. The proposed Project area includes the following networks identified in the City's Mobility Plan: ▪ Sepulveda Boulevard: Transit enhanced network (north leg), Pedestrian enhanced district (north leg), Goods movement (truck route) ▪ Century Boulevard: Transit enhanced network, Pedestrian enhanced network ▪ 96th Street: Neighborhood enhanced network, and Pedestrian Enhanced District ▪ 98th Street: Citywide General Plan Circulation System Source: Mobility Plan 2035 (pages 134-149). 2.3 Pedestrian Infrastructure: Mobility Plan 2035 identifies Pedestrian Enhanced Districts (PED) where initial analysis suggests arterials can be improved and further analysis and prioritization will occur as funding and projects become available. The proposed Project

Table 4.8-12
Guiding Questions to Address Proposed Project's Consistency with Transportation-Related City Plans, Programs, Ordinances, and Policies[1]

Question	Guiding Questions	Relevant Plans, Policies, and Programs	Evaluation
	▪ Bicycle Lane Network ▪ Pedestrian Enhanced District ▪ Neighborhood Enhanced Network Is the project within the service area of Metro Bike Share, or is there demonstrated demand for micro-mobility services?		would include replacement of existing sidewalks along 96th Street that would occur in conjunction with the proposed realignment of a portion of 96th Street. 2.4 Neighborhood Enhanced Network: The Neighborhood Enhanced Network (NEN) is a selection of streets to provide comfortable and safe routes for localized travel of slower-moving modes, such as walking or biking. The proposed Project includes replacement of existing sidewalks along 96th Street that would occur in conjunction with the proposed realignment of a portion of 96th Street. 2.5 Transit Network: This policy identifies specific streets as part of the Transit Enhanced Network (TEN) to receive improvements that enhance the performance and reliability of existing and future bus service. Implementation of the proposed Project would not adversely affect transit service. 2.6 Bicycle Networks: This policy establishes a Bicycle Enhanced Network (BEN), which is comprised of protected bicycle lanes and bicycle paths, to provide bikeways for a variety of users. Although the proposed Project proposes to modify 96th Street east of Sepulveda Boulevard, the bicycle lanes on 96th Street are planned to be removed as part of the LAX Landside Access and Modernization Program. Notwithstanding, should removal of those bicycle lanes occur as part of the proposed Project in lieu of the removal anticipated under the LAX Landside Access and Modernization Program, their removal would be offset by other replacement bicycle lanes in the vicinity under the LAX Landside Access and Modernization Program. 2.7 Vehicle Network: This policy establishes a Vehicle Enhanced Network (VEN) to identify corridors that will remain critical to vehicular circulation and to balance regional and local circulation needs. None of the streets in the Project area are on the VEN. Source: From the City's Mobility Plan 2035 and NavigateLA. No, the proposed Project is not within the service area of Metro Bike Share, nor is there demonstrated demand for micro-mobility services.
B. Mobility Plan 2035 Public Right of Way Policy Alignment with Project-Initiated Changes			
B.1	Does the project physically modify the curb placement or turning radius and/or physically alter the sidewalk and parkways space that changes how people access a property?	MP 2.1, 2.3, 3.2, 2.10, and Street Designations and Standard Roadway Dimension	Yes, the proposed Project would realign sidewalks along 96th Street in conjunction with realignment of that street. The proposed Project may include redesigning the existing landscaping at Sepulveda and Century boulevards due to construction of new ramps. The physical changes in the Public Right of Way, including curb placement, sidewalks and parkways, that would occur relative to the proposed roadway improvements, could change the current specifics of how people access the property, but would not degrade the experience of vulnerable roadway users, nor preclude the City from advancing the safety of vulnerable roadway users.

Table 4.8-12
Guiding Questions to Address Proposed Project's Consistency with Transportation-Related City Plans, Programs, Ordinances, and Policies[1]

Question	Guiding Questions	Relevant Plans, Policies, and Programs	Evaluation
B.2	Does the project add new driveways along a street designated as an Avenue or a Boulevard that conflict with LADOT's Driveway Design Guidelines?	MP 2.10, PL.1, CDG 2, MPP 321	Yes, the proposed Project would add a new driveway along an Avenue or a Boulevard. The new driveway access along Vicksburg Avenue, between 98th Street and 96th Street, would be designed in accordance with LADOT's Driveway Design Guidelines.
B.2.1	Would the physical changes in the public right of way or new driveways that conflict with LADOT's Driveway Design Guidelines degrade the experience of vulnerable roadway users such as modify, remove, or otherwise negatively impact existing bicycle, transit, and/or pedestrian infrastructure?	Mobility Plan 2035: Transit Enhanced Network, Bicycle Enhanced Network, Bicycle Lane Network, Pedestrian Enhanced District, Neighborhood Enhanced Network, High Injury Network, TOC Guidelines	Transit Enhanced Network: The proposed Project would not adversely affect existing transit services in the Project area. Roadway improvements proposed along 96th Street would occur in close proximity to two bus stops located near Sepulveda Boulevard, which may require a nearby relocation of, and/or modification to, one or both of the stops and would be coordinated with the affected transit agency(s). 2.3 Pedestrian Infrastructure: The proposed Project would include replacement of existing pedestrian facilities on 96th Street. Specifically, the existing sidewalks along the portions of 96th Street that would be realigned as part of the Project would be replaced in conjunction with road construction. As such, pedestrian access and infrastructure would not be lost. MP-BEN: Although the proposed Project proposes to modify 96th Street east of Sepulveda Boulevard, the bicycle lanes on 96th Street are planned to be removed as part of the LAX Landside Access and Modernization Program. The Project would not disrupt existing bicycle facilities since these are already planned for removal under the LAX Landside Access and Modernization Program and other bicycle lanes and multi-use paths are being added in the vicinity. Healthy LA: This plan states a balanced, affordable, and sustainable transportation system is a cornerstone of a healthy city. Policy 2.11, Foundation for Health, highlights the role of sidewalks as an important asset that promotes active transportation, safe community corridors, and healthy neighborhoods. The Project would not be inconsistent with, limit, or preclude the City's ability to implement programs and policies in furtherance of Healthy LA. Vision Zero: The City of Los Angeles Vision Zero initiative strives to enable all people to move freely and safely on the street. The proposed Project would not be inconsistent with the design standards of the City of Los Angeles, which is in line with Vision Zero Los Angeles. Although segments of Sepulveda Boulevard and Century Boulevard are designated as part of the City's HIN, none of these sections are on the list of Prioritized (or targeted) Corridors as part of Vision Zero Los Angeles. The proposed Project would not preclude the City from implementing future planned improvements as part of Vision Zero Los Angeles.

Table 4.8-12
Guiding Questions to Address Proposed Project's Consistency with Transportation-Related City Plans, Programs, Ordinances, and Policies[1]

Question	Guiding Questions	Relevant Plans, Policies, and Programs	Evaluation
			Sustainability pLAn: The Sustainability pLAn focuses on public transit, bicycling, walking, and locating Angeleno's residences near transit and places they would want to travel. The proposed Project would not be inconsistent with the overall intent of the plan to provide a safe and efficient transportation system for all users.
B.2.2	Would the physical modifications or new driveways that conflict with LADOT's Driveway Design Guidelines preclude the City from advancing the safety of vulnerable roadway users?		No, the physical modifications of the proposed Project would not preclude the City from advancing the safety of vulnerable roadway users.
C. Network Access			
C1.1	Does the project propose to vacate or otherwise restrict public access to a street, alley, or public stairway?	MP 3.9	No, the Project does not propose to vacate or otherwise restrict public access to a street, alley, or public stairway. More specifically, 96th Street west of Sepulveda Boulevard would be a street vacation without public access, while east of Sepulveda Boulevard, it would still have access with a private street easement. Vicksburg Avenue between 96th Street and 98th Street would be a street vacation to a private street easement, but would still have public access.
C.1.2	If the answer to C.1.1 is Yes, will the project provide or maintain public access to people walking and biking on the street, alley or stairway?		Not applicable.
C.2.1	Does the project create a cul-de-sac or is the project located adjacent to an existing cul-de-sac?	MP 3.10	MP 3.10 Cul-de-sacs: This policy discourages the use of cul-de-sacs that do not provide access for active transportation options. The Project does not create a cul-de-sac, nor is it adjacent to an existing cul-de-sac.
C.2.2	If yes, will the cul-de-sac maintain convenient and direct public access to people walking and biking to the adjoining street network?		Not applicable.
D. Parking Supply and Transportation Demand Management			
D.1	Would the project propose a supply of onsite parking that exceeds the baseline amount as required in the Los Angeles Municipal Code or a Specific plan, whichever requirement prevails?	MP 3.8, 4.8, 4.13	Not applicable. The LAX Specific Plan applicable to this area does not have a parking requirement.

Table 4.8-12
Guiding Questions to Address Proposed Project's Consistency with Transportation-Related City Plans, Programs, Ordinances, and Policies[1]

Question	Guiding Questions	Relevant Plans, Policies, and Programs	Evaluation
D.2	If the answer to D.1. is YES, would the project propose to actively manage the demand of parking by independently pricing the supply to all users (e.g., parking cash-out), or for residential properties, unbundle the supply from the lease or sale of residential units?		Not applicable.
D.3	Would the project provide the minimum on and off-site bicycle parking spaces as required by Section 12.21 A.16 of the LAMC?		Not applicable. The main use of Project facilities would be by airline passengers, which would involve negligible use of bicycles. Bicycle travel to and from Concourse 0 and Terminal 9 utilizing CTA roadways poses safety and efficiency concerns for traffic on those roadways. Such bicycle use is, however, supported by the LAX Landside Access and Modernization Program facilities that provide bicycle access outside the CTA, with connections to the CTA via the APM.
D.4	Does the Project include more than 25,000 square feet of gross floor area construction of new non-residential gross floor?		Yes, the proposed Project includes over two million square feet of gross floor area construction of new non-residential gross floor.
D.5	If the answer to D.4. is YES, does the project comply with the City's TDM Ordinance in Section 12.26 J of the LAMC?		Yes, the proposed Project would comply with applicable provisions of Section 12.26 J of the LAMC.
E. Consistency with Regional Plans			
E.1	Does the Project or Plan apply one of the City's efficiency-based impact thresholds (i.e., VMT per capita, VMT per employee, or VMT per service population) as discussed in Section 2.2.3 of the TAG?		Yes, the Project applies one of the City's efficiency-based impact thresholds: VMT per employee.
E.2	If the Answer to E.1 is YES, does the Project or Plan result in a significant VMT impact?		Yes, the Project does result in a significant VMT impact related to an efficiency-based impact threshold (i.e., VMT per employee); however, that impact can be mitigated to a level that is less than significant.

Table 4.8-12
Guiding Questions to Address Proposed Project's Consistency with Transportation-Related City Plans, Programs, Ordinances, and Policies[1]

Question	Guiding Questions	Relevant Plans, Policies, and Programs	Evaluation
E.3	If the Answer to E.1 is NO, does the Project result in a net increase in VMT?		Although the Project analysis applies an efficiency-based impact threshold related to employment VMT, the analysis also applies non-efficiency-based impact thresholds for passenger VMT and induced VMT. The Project would result in a net increase in VMT relative to those impacts.
E.4	If the Answer to E.2 or E.3 is YES, then further evaluation would be necessary to determine whether such a project or land use plan would be shown to be consistent with VMT and GHG reduction goals of the SCAG RTP/SCS		See discussion above in Table 4.8-11 as related to the SCAG RTP/SCS. The Project would not be inconsistent with the VMT or GHG reduction goals of the SCAG RPT/SCS.

Source: Fehr and Peers, 2020.

Notes:

[1] Item Number; Guiding Questions; Relevant Plans, Policies, and Programs; and Supporting/Complementary City Plans, Policies, and Programs to Consult from LADOT TAG.

[2] City of Los Angeles, Bureau of Street Services, *Coordinated Street Furniture Program webpage*. Available: https://streetsla.lacity.org/coordinated-street-furniture-program, accessed July 8, 2020.

Key:

LAMC = City of Los Angeles Municipal Code; MP = Mobility Plan 2035; TEN = Transit Enhanced Network; PED = Pedestrian Enhanced District; BEN = Bicycle Enhanced Network; TOC = Transit Oriented Communities; ENG = Engineering; PL = Planning; CDG = Citywide Design Guidelines; MPP = Manual of Policies and Procedures

Based on the information and analyses presented in Table 4.8-11 and Table 4.8-12 above, the proposed Project's relationship to transportation-related plans, policies, ordinances, and programs would not result in significant impacts to the environment; hence, the impact of the proposed Project would be ***less than significant***.

4.8.5.1.2 Mitigation Measures

Because the proposed Project would result in a ***less than significant impact*** regarding transportation-related plans, policies, ordinances, and programs, no mitigation is required.

4.8.5.1.3 Significance of Impact After Mitigation

As indicated above, no mitigation is required to address transportation regarding transportation-related plans, policies, ordinances, and programs. The proposed Project would result in a ***less than significant impact***.

4.8.5.2 Impact 4.8-2

Summary Conclusion for Impact 4.8-2: The proposed Project would generate VMT per employee exceeding 15 percent below the Projected Future Conditions Baseline (2028) VMT per employee (i.e., 20.4). This would be a *significant impact*. With mitigation, the impact would be *less than significant.*

4.8.5.2.1 Project Impacts

The Project Travel Demand Model was used to assess the total trip generation and VMT per employee for all scenarios considered: existing conditions (2019), Projected Future Conditions Baseline (2028), and Proposed Project (2028). The VMT model results are shown earlier in Table 4.8-10, and are repeated below in **Table 4.8-13**.

Table 4.8-13
Summary of Projected VMT for Existing Conditions, Projected Future Conditions Baseline (2028), and Proposed Project (2028)

Measure	Existing Conditions (2019)	Projected Future Conditions Baseline (2028)	Proposed Project (2028)
Total Passenger VMT	6,581,811	8,676,209	8,708,995
VMT per Employee	25.2	24.0	23.9
Short-term Induced VMT	-	-	3,306
Long-term Induced VMT	-	-	18,220

Source: Fehr and Peers, 2020.

As shown in Table 4.8-13, VMT per employee under Projected Future Conditions Baseline (2028) will be more efficient than under existing (2019) conditions. This is primarily due to planned improvements to transit (e.g., opening of the Crenshaw/LAX Line) and improvements associated with Phase 1 of the LAX Landside Access Modernization Program, including new roadways, the APM, ITF West, ITF East, and CONRAC, as well as travel demand management (TDM) measures. These changes will result in an improved efficiency metric of 24 VMT per employee (compared to 25.2 under existing conditions).

The addition of the proposed Project would result in changes to the parking destination for some existing and new Project employees, which would slightly improve the VMT per employee rate. As shown in Table 4.8-13, the Project would result in 23.9 VMT per employee. Although this would be a decrease compared to Projected Future Conditions Baseline (2028), the decrease would not be at least 15 percent

below the baseline (i.e., 20.4), which is the threshold of significance (i.e., the future VMT with the proposed project must be at least 15 percent below the Projected Future Conditions Baseline (2028) in order for the impact to be less than significant). Because the proposed Project would generate VMT per employee that would exceed 15 percent below the Projected Future Conditions Baseline (2028) VMT per employee rate, this would be a ***significant impact***.

4.8.5.2.2 Mitigation Measures

The following presents the VMT Mitigation Program recommended for the proposed Project. Although VMT impacts associated with the proposed Project have been categorized into three types of impacts – employee VMT impacts, passenger VMT impacts, and induced VMT impacts – the VMT Reduction Program is designed to address all three types of impacts through a single comprehensive program.

- **MM-T (ATMP)-1 VMT Reduction Program.**

  Prior to operation of Concourse 0 or Terminal 9, LAWA shall initiate implementation of a VMT Reduction Program. The VMT Reduction Program described below includes a variety of VMT reduction strategies that LAWA will choose from in mitigating the VMT impacts of the proposed Project. As further described below, LAWA will monitor on an annual basis for a defined period the effectiveness of the strategies to determine if the required level of mitigation (i.e., the quantified level of VMT reduction) is being achieved. While a broad array of potential VMT mitigation reduction strategies is identified below, this list is not intended to limit future VMT reduction strategies to only those presented herein. If other feasible VMT reduction strategies are identified in the future and are needed to reduce the VMT impacts below the level of significance, they, too, may be implemented.

  The selection, implementation, and monitoring and reporting of VMT reduction strategies will occur in conjunction with the existing ground transportation management function within LAWA (i.e., in coordination with LAWA's management of employee carpools, vanpools, transit, etc.).

  VMT Reduction Strategies

  The pool of potential VMT reduction strategies currently considered available for reducing VMT impacts associated with the proposed Project are described below. For the first four strategies, there is published research about the effectiveness of each of the strategies, and estimates about the effectiveness of each strategy can be made based on conditions at LAX; therefore, an estimate of the amount of VMT reduction associated with these strategies is provided. Following the descriptions of those first four strategies is a listing of additional VMT reduction strategies whose effectiveness in reducing VMT is more difficult to estimate at this time due to the lack of available research or data; nonetheless, these additional VMT reduction strategies are included because, as a matter of professional judgment, they appear to have the potential to result in decrease in VMT. Regardless, the actual effectiveness of the VMT reduction strategies selected for implementation would be validated through annual monitoring and reporting, as further described below.

  - **Expand LAWA's Rideshare Program** – Currently, LAWA's rideshare program serves LAWA's employees and results in a 13.4 percent commute mode share for the vanpool program and additional participation in carpools.[57] The LAX employee population currently has a 5.5 percent commute mode share for vanpools.[58] Expanding the LAWA program to all LAX employees, with a corresponding expansion of vans in service to meet the increased demand,

[57] Los Angeles World Airports SCAQMD Filing, August 2019, as reported via email from M. Molina, LAWA to P. Adams, LAWA on May 21, 2020.

[58] City of Los Angeles, Los Angeles World Airports, *Employee Travel Study of Los Angeles International Airport*, prepared by Point C, updated July 2016.

is expected to produce a similar vanpool mode share as is currently seen for LAWA employees. Vanpools are a flexible strategy that accommodate a variety of shift schedules and residential locations, ideal for a large workforce such as that of the LAX campus. Furthermore, vanpools were a frequently-requested program in the 2016 Employee Travel Study of Los Angeles International Airport, which surveyed employees across LAX of all types. When applied to the entire LAX employee pool, this would result in an increase in vanpool mode share for LAX employees of 7.9 percent, representing a shift from employees driving alone to employees driving with others in a vanpool. Additional participation in carpools would also be anticipated as a result of this strategy. Based on the strategy description above, total VMT reduction from this strategy is estimated to be over 60,000 daily employee VMT. This assumes new vanpool riders shift from drive-alone mode share (80 percent of LAX employees) and each van carries six employees (driver plus passengers).

- **Formalize Employee Telecommuting Program** – Eligible employees across all employers on the LAX campus shall be allowed to telecommute through a formalized work-from-home program. Recognizing that LAWA job requirements are not fully representative of all LAX employees, most of whom need to be on-site to fulfill their job duties, a review of job titles across the LAX campus was conducted, resulting in an estimate that four percent of all jobs across LAX could be completed at least partially from home. Based on research related to telecommute programs, a telecommute program that enables an average of 1.5 days per week to be spent working from home, with a four percent eligibility, would result in a 0.88 percent reduction in VMT from the employment site.[59] Based on these assumptions, total VMT reduction from this strategy is estimated to be over 7,000 daily employee VMT.
- **Provide On-demand Micro-Transit Shuttle** – [Relative to employee VMT reduction, LAWA is currently engaged in the development of an employee shuttle in partnership with the City of Inglewood, and a separate pilot program in partnership with Metro. The expansion of these pilot programs into full programs, and the expansion of the service area beyond the City of Inglewood and the Metro service area, would result in additional reduction of single-occupancy commute trips to LAX from the nearby neighborhoods. Based on a review of employee residential locations, nine percent of employees at LAX live within five miles of the airport. Based on research related to private employee shuttles serving employment centers, an estimated 27 percent of the employees within the service area who would have driven alone would switch to a shuttle if it existed.[60] Based on these assumptions, total VMT reduction from this strategy is estimated to be over 4,700 daily employee VMT. If the service area were expanded to a radius of 10 miles or farther, additional employees with longer commute trip lengths would be expected to switch to using the shuttle, resulting in additional VMT reduction. Micro-transit systems can, as an option, be set up as point-to-point shuttles different from van pools by utilizing larger vehicles, some with amenities, having a dedicated driver, with passenger pick-ups and drop-offs at designated hubs (instead of individual homes).

  Long-term, these pilot programs can serve as examples of service options that can be expanded into a full program that is available to both employees and passengers, which would result in reduction of private vehicle trips to LAX from passengers who live in the nearby neighborhoods. Based on a review of originating passenger residential locations, three

[59] Cambridge Systematics, *Moving Cooler: An Analysis of Transportation Strategies for Reducing Greenhouse Gas Emissions,* Technical Appendices, prepared for the Urban Land Institute (p. B-54). As reported in the California Air Pollution Control Officers Association, *Quantifying Greenhouse Gas Mitigation Measures*, page 237, 2010. Available: http://capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf.

[60] Handy, Lovejoy, Boarnet, Spears, *Impacts of Transit Service Strategies on Passenger Vehicle Use and Greenhouse Gas Emissions,* 2013.

percent of passengers live in neighborhoods within five miles of the airport.[61] Based upon research related to private employee shuttles serving employment centers, which is the best available corollary to this type of passenger micro-transit shuttle, an estimated 27 percent of passengers within the service area who would otherwise drive alone would switch to a shuttle if it existed.[62] If the service area were expanded to a radius of 10 miles, additional passengers with longer trip lengths would be expected to switch to using the shuttle.

- **Market and Promote Alternative Transportation Options** – Promotions, marketing, and online trip-planning tools shall be implemented to promote alternative options to get to and from LAX using modes other than a private vehicle. Relative to employee VMT, LAWA currently engages, through its Rideshare program, in marketing and promoting alternative options to get to LAX using modes other than a private vehicle. There is opportunity to increase the frequency and diversify the format of marketing and promotions to LAWA employees, increase the number of LAX employees that receive marketing and promotions communications through the expansion of the Rideshare program, and enhance the relevance of existing sources of information such as online trip-planning tools. Promotions and marketing that encourage employees to change their commute habits, including periodic incentives to participate (such as Earth Day promotions), in conjunction with the increasing number of non-auto options to get to LAX in the future, would be anticipated to further reduce employee VMT. Based on available research, the VMT reduction potential from this strategy is grouped with the expansion of the rideshare program, and no additional VMT reductions are assumed to be produced from this strategy in isolation.[63]

  Relative to passenger VMT reduction, LAX does not currently engage in comprehensive marketing and promotions for alternative options to get to and from LAX using modes other than a private vehicle; therefore, there are certain aspects of marketing and promotion that could, as part of the proposed VMT Reduction Program, be expanded. Online trip-planning tools, such as Google Maps and Metro's trip planner, offer ways for a passenger to get to LAX via public transit or alternative modes. These tools, however, require a passenger to seek out proactively that information. Promotions and marketing that capture passengers' attention at all stages of the trip-making process, in conjunction with the increasing number of non-auto options to get to LAX in the future, would be anticipated to reduce passenger VMT.[64]

Implementation of the four strategies described above would be anticipated to reduce airport-wide employment VMT by more than 16,450 daily VMT, which is equivalent to reducing daily employee commute VMT to an average VMT per employee that is below the performance goal of 20.4 for Concourse 0 and Terminal 9 employees.

Additional Strategies

Following are additional strategies that could be implemented:

- **Conduct Parking Study to Price Parking to Reduce VMT** – Conduct a parking study to identify opportunities to price employee parking and passenger parking such that VMT reduction is achieved. Due to the prevalence of a widespread off-campus, competitive parking market, a parking study would need to be conducted in order to determine what on-campus price points

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61 Unison Consulting. *2019 Passenger Survey – Los Angeles International Airport*, October 18, 2019. Available: https://www.lawa.org/-/media/lawa-web/lawa-our-lax/studies-and-reports/lax_survey_final_report_2019.ashx.

62 Handy, Lovejoy, Boarnet, Spears, *Impacts of Transit Service Strategies on Passenger Vehicle Use and Greenhouse Gas Emissions*, 2013.

63 California Air Pollution Control Officers Association, *Quantifying Greenhouse Gas Mitigation Measures,* page 242, 2010. Available: http://capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf.

64 National Academies of Sciences, Engineering, and Medicine, *Traveler Response to Transportation System Changes Handbook, Third Edition*: Chapter 19, Employer and Institutional TDM Strategies, Table 19-1, 2010. Washington, DC: The National Academies Press. Available: http://www.trb.org/Publications/Blurbs/163781.aspx.

would deter passengers and employees from driving, rather than simply pushing them to use off-campus options.

- **Expand Incentives and Commuter Benefits** – LAWA will provide enhanced commuter incentives, including expanded carpool benefits, transit subsidies, guaranteed ride home, and vanpool support to LAWA employees. LAWA will also coordinate with other LAX employers that have such incentives and benefits to encourage the expansion of those programs.
- **Evaluate Modifications to FlyAway Service** – In conjunction with renewing the contract for the provision of the FlyAway bus service, LAWA shall evaluate the potential to reach new geographical areas where potential ridership would support establishment of a route to such areas and will implement such routes if determined feasible.
- **Explore Incentive Measures from LAWA Mobility Strategic Plan**
  - LAWA will partner with airlines to explore integrated ticketing solutions for airline and transit tickets as a potential means to incentivize the use of transit.
  - LAWA will partner with TSA to explore expedited security screening for FlyAway passengers and other transit customers as a potential means to incentivize the use of transit.
- **Evaluate the Potential for Congestion Pricing in the CTA** – Pricing mechanisms (such as charging for parking or charging for toll lanes) are one of the most effective ways to manage travel demand, encouraging travelers to use high-occupancy alternatives such as transit, shuttles, and off-site intermodal facilities to access the airport, thereby reducing VMT. Pricing can be variable based on time of day to be highest during the periods of highest demand and lowest during periods where demand is lower. An additional benefit to this strategy is congestion reduction in the CTA, thereby improving the experience for vehicles (including both private vehicles and high-occupancy shuttles) that use the CTA.

The discussion of the strategies presented above is based on data, research and conditions at LAX that reflect pre-COVID-19 conditions. There is considerable uncertainty regarding whether or when COVID-19 will no longer affect ground transportation conditions at LAX. In particular, there is uncertainty regarding how ground transportation conditions at LAX will evolve over time in light of COVID-19. There is no way to anticipate how or when this evolution may occur, except by engaging in speculation, which CEQA does not require. That is part of the reason why the implementation of these strategies is accompanied by a robust monitoring and reporting program, as outlined further below.

The following describes the anticipated ability of such VMT reduction strategies to mitigate the three types of VMT impacts.

- Ability of Strategies to Mitigate Employment VMT Impact. There are numerous VMT reduction strategies related to employment VMT. Such strategies can be applied airport-wide and include LAWA employees, as well as non-LAWA airport employees (e.g. airline employees, concessionaire employees, security employees, operations employees). The employment VMT mitigation strategies presented herein for the proposed Project would be over and above the extensive transportation management/reduction programs that are already in place at LAX[65] or are already being developed and implemented independent of the proposed Project, such as those associated with the LAX Landside Access Modernization Program and the 2020 LAWA Mobility Strategic Plan. Meeting the employment VMT mitigation requirement for the proposed Project would require reducing a total of 16,450 daily VMT from airport-wide employment, which is equivalent to a

[65] See LAWA website regarding existing rideshare programs and other employee trip reduction programs, available at: https://www.lawa.org/lawa-environment/environmental-programs-group/lawa-rideshare.

performance goal of 20.4 VMT per employee of the Project, as described above in Section 4.8.5.2. The employment VMT mitigation will be monitored and reported on an annual basis, and will be tied to the number of Concourse 0 and Terminal 9 employees each year up to completion of each facility. The employment VMT mitigation requirement will be considered to be fully satisfied if, at buildout of Concourse 0 and Terminal 9, airport-wide employment VMT is reduced by 16,450 daily VMT, which is equivalent to meeting a performance goal of 20.4 VMT per employee associated with the proposed Project. Based on the strategies that are available for employment VMT and LAWA's ability to control, monitor, and report on the implementation of such strategies, it is anticipated that the employment VMT impacts associated with the proposed Project would be reduced to a level that is less than significant, as concluded in Section 4.8.5.2.3 below.

- Ability of Strategies to Mitigate Passenger VMT Impact. Unlike employment VMT, the available strategies for reducing passenger VMT are more limited, are less within the control of LAWA, and are more difficult to monitor and report. The VMT reduction strategies related to passengers are primarily incentive-based, with no research available for application of these strategies in an airport context, no certainty as to their effectiveness in reducing VMT, and limited opportunity to document or demonstrate their ability to reduce passenger VMT. As explained above, the Project is expected to result in a net increase of passenger-related 32,786 VMT per day, as compared to 2028 baseline conditions. The significance threshold is 'no net increase in passenger-related VMT.' Thus, in order to avoid this impact, LAWA would have to implement programs that would result in a reduction of 32,786 VMT per day. Given the limitations of the research and strategies to reduce passenger VMT, the passenger VMT impact associated with the proposed Project would be significant and unavoidable, as concluded in Section 4.8.5.3.3 below.
- Ability of Strategies to Mitigate Induced VMT Impact. LAWA has not identified any potentially feasible mitigation measures to substantially lessen or avoid induced VMT. Induced VMT would occur on surface roads that are outside of LAWA's control, and involve persons who are not traveling to or from LAX. As previously described, *induced VMT* refers to the VMT that is unrelated to airport operations but rather related to the improved roadway operations on nearby surface streets as a result of the roadway improvements that are part of the proposed Project. LAWA does not have the authority or ability to regulate such travel. In addition, LAWA has not identified a measure that would prevent or discourage such travelers. Induced VMT can be addressed only on a regional scale, through long-term land use changes and major transit investments. As such, the induced VMT impact associated with the proposed Project would be significant and unavoidable, as concluded in Section 4.8.5.4.3 below.

Annual Monitoring and Reporting

In conjunction with the selection and implementation of VMT reduction strategies, LAWA shall implement an annual monitoring and reporting process to validate the level of LAX employee VMT reduction attained each year. The amount of VMT reduction that is attained during each reporting year from implementation of the reduction strategies shall be applied against the number of employees working at Concourse 0 and Terminal 9 during that year in order to calculate the VMT per employee and determine whether the performance goal of 20.4 or VMT equivalent has been met. In the event the resultant VMT per employee or VMT equivalent for the reporting year is greater than 20.4, adjustments to the existing VMT reduction strategies or additional VMT reduction strategies shall be implemented. The annual monitoring shall also report on the amount of reductions associated with passenger VMT, as accomplished through reduction strategies that apply to passenger VMT.

In the event that the amount of employee VMT reduction for the reporting year exceeds the amount required to mitigate the employee VMT impact, the excess mitigation (VMT reduction above and beyond the level of reduction needed to achieve the employee VMT performance goal of 20.4 VMT per

employees) can be credited towards mitigation of the passenger VMT impact. In the event that the total amount of VMT reduction for the reporting year exceeds both the amount of VMT reduction required to mitigate the employee VMT impact and the amount of VMT impact associated with passengers, the excess mitigation can be credited towards the induced VMT impact.

Basis for Determining Mitigation Requirement Has Been Achieved

Monitoring and reporting on the effectiveness of the VMT reduction strategies would occur on an annual basis, beginning upon initial operation of Concourse 0 or Terminal 9. Upon completion and operation of both facilities, the annual monitoring shall be such that, if the VMT per employee performance goal of 20.4 or VMT equivalent is achieved for three consecutive years, the VMT mitigation requirement for the proposed Project will be considered to have been achieved.

4.8.5.2.3 Significance of Impact After Mitigation

With implementation of Mitigation Measure MM-T (ATMP)-1, the significant impact related to employment VMT would be reduced to a ***less than significant impact***.

4.8.5.3 Impact 4.8-3

Summary Conclusion for Impact 4.8-3: The proposed Project would result in a net increase of 32,786 total passenger VMT over the Projected Future Conditions Baseline (2028). This would be a *significant impact*. Even with mitigation, this would remain a *significant and unavoidable impact.*

4.8.5.3.1 Project Impacts

The Project Travel Demand Model was used to assess the total trip generation and total passenger VMT for all scenarios considered: existing conditions (2019), Projected Future Conditions Baseline (2028), and Proposed Project (2028). The model results are shown in Table 4.8-9 (trip generation) and Table 4.8-10 (VMT) above. As shown in Table 4.8-10, the total passenger VMT will increase under the Projected Future Conditions Baseline when compared to 2019 Existing Conditions. This is due to an increase in the passenger activity at LAX by year 2028, when passenger levels are projected to increase to 110.8 million annual passengers (MAP) with or without implementation of the proposed Project. With implementation of the proposed Project, while the passenger activity would be the same as under Projected Future Conditions Baseline in 2028 (i.e., 110.8 MAP), passenger VMT would change slightly due to the addition of 5.8 miles of new Project roadways and trip routing choices resulting in a redistribution of trips to the new Terminal 9 parking facility. These additional miles of roadway and the redistribution of trips to the Terminal 9 parking facility would result in an incrementally small increase in individual passenger VMT. However, as shown in Table 4.8-10, when multiplied by the number of passengers that are expected to arrive at and depart from LAX on a daily basis, total passenger VMT would be 8,708,995 in 2028 with the proposed Project. This would be a positive net change of 32,786 VMT over the Projected Future Conditions Baseline (2028) daily passenger VMT (8,676,209). The increase in total passenger VMT over the Projected Future Conditions Baseline (2028) is considered to be a ***significant impact***.

4.8.5.3.2 Mitigation Measures

Mitigation Measure MM-TR (ATMP)-1, presented above in Section 4.8.5.2.2, includes strategies for reducing passenger VMT. As also noted in that section, any excess VMT reduction associated with employee VMT reduction strategies could be credited to the mitigation of the passenger VMT impact.

4.8.5.3.3 Significance of Impact After Mitigation

As described above, uncertainties regarding the control and effectiveness of passenger VMT reduction strategies and regarding the ability to document how much passenger VMT reduction was actually achieved inhibits the ability to conclude that the passenger VMT impact would be fully mitigated. Even

with the potential for excess VMT reduction from employee VMT reduction strategies to be credited against the passenger VMT impact, it is still uncertain whether that would be sufficient to fully mitigate the impact. As such, this would remain a ***significant and unavoidable impact***.

4.8.5.4 Impact 4.8-4

Summary Conclusion for Impact 4.8-4: The proposed Project would induce an additional 18,220 VMT compared to the Projected Future Conditions Baseline (2028). This would be a *significant impact*. There are no feasible mitigation measures for this impact. As such, it would be a *significant and unavoidable impact.*

4.8.5.4.1 Project Impacts

Short-Term Induced VMT

Short-term induced VMT related to the proposed Project was assessed using the Project Travel Demand Model. The aim of measuring short-term induced VMT is to determine the direct effect of additional transportation roadway capacity on VMT, thus isolating the network effect. This was achieved by running the model with and without the new Project roadways but holding all other parameters constant.

The proposed Project would increase the capacity of the roadway network. By adding additional lanes and associated queuing space for vehicles entering the CTA, the new roadways would reduce congestion on Sepulveda Boulevard which, in turn, is projected to result in more people using the local roadway network, thereby increasing non-airport-related travel and hence VMT. The model results related to short-term induced VMT were presented earlier in Table 4.8-10 and are repeated here in **Table 4.8-14**.

Table 4.8-14
Summary of Projected VMT for Existing Conditions, Projected Future Conditions Baseline (2028), and Proposed Project (2028)

Measure	Existing Conditions (2019)	Projected Future Conditions Baseline (2028)	Proposed Project (2028)
Total Passenger VMT	6,581,811	8,676,209	8,708,995
VMT per Employee	25.2	24.0	23.9
Short-term Induced VMT	-	-	3,306
Long-term Induced VMT	-	-	18,220
Source: Fehr and Peers, 2020.			

As shown in the table, the additional roadway capacity that would be provided as part of the proposed Project would result in short-term induced VMT of 3,306. This is considered to be a substantial, short-term increase and would be a ***significant impact***.

Long-Term Induced VMT

As discussed in Section 4.8.5.1, the proposed Project roadway improvements are not yet included in the SCAG 2020-2045 RTP/SCS. The proposed Project improvements would add 5.8 lane miles to the roadway network, and the effect of these new roadways result in additional vehicle capacity between the tunnel and 98th Street (0.5 mile) on Sepulveda Boulevard, equivalent to a 0.0062 percent increase in lane miles relative to the Projected Future Conditions Baseline (2028) roadways. Total regional VMT for the Projected Future Conditions Baseline (2028) is forecast to be 283,543,722 VMT across the full extent of the travel model. As discussed in Section 4.8.2.3.2, based on the body of research on long-term induced travel, every percent increase in lane miles would result in a 1.03 percent increase in vehicle travel (the elasticity factor). In order to calculate the Long-Term induced VMT, the total VMT from the travel model for the

Project scenario (283,543,722 VMT) was multiplied by the percent change in lane miles, which was then multiplied by the elasticity. Therefore, the total long-term, cumulative induced VMT impact of the non-airport trips related to the proposed Project roadway network would be 18,220 VMT. This is considered to be substantial additional VMT. Therefore, this would be a ***significant impact***.

4.8.5.4.2 Mitigation Measures

There are no feasible mitigation measures to directly address the induced VMT impact. Similar to above mitigation of passenger VMT, any excess VMT reduction associated with employee VMT reduction strategies could be credited to the mitigation of the induced VMT impact.

4.8.5.4.3 Significance of Impact After Mitigation

Even with the potential for excess VMT reduction from employee VMT reduction strategies to be credited against the induced VMT impact, it is uncertain whether that would be sufficient to fully mitigate the impact. As such, induced VMT would be a ***significant and unavoidable impact.***

4.8.5.5 Impact 4.8-5

Summary Conclusion for Impact 4.8-5: The proposed Project would not substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses. This would be a *less than significant impact*.

4.8.5.5.1 Project Impacts

Per the City of Los Angeles guidance for vehicle, bicycle, and pedestrian safety impacts, and based on the available information, proposed Project access points, internal circulation, and parking access were reviewed from an operational and safety perspective. Where Project driveways would cross pedestrian facilities or bicycle facilities (bike lanes or bike paths), operational and safety issues were considered related to the potential for vehicle/pedestrian and vehicle/bicycle conflicts and the severity of consequences that could result. Full details of the analysis for this impact threshold are provided in **Appendix G.10**, *Assessment of Hazards*.

Based on the proposed infrastructure, level of existing activity, and anticipated level of activity attributable to the proposed Project, the proposed Project would not substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) and would be in compliance with City design standards. Moreover, the land uses associated with the proposed Project (i.e., roadway improvements and passenger terminals) would not be incompatible with existing land uses in the Project area, which consist of airport and commercial uses. For these reasons, the impact would be ***less than significant***.

Freeway Safety Analysis

Per the LADOT interim guidance for freeway safety analysis, a total of seven freeway off-ramps were evaluated to determine whether the Project would add 25 or more net new trips during the morning or afternoon peak hour. The seven freeway off-ramps evaluated include:

- I-405 Northbound Off-Ramp & Century Boulevard
- I-405 Southbound Off-Ramp & 98th Street
- I-405 Southbound Off-Ramp & Howard Hughes Parkway
- I-405 Southbound Off-Ramp & Florence Avenue
- I-405 Southbound Off-Ramp & La Tijera Boulevard
- I-105 Westbound Off-Ramp & Sepulveda Boulevard
- I-105 Westbound Off-Ramp & Imperial Highway/Nash Street

Of the freeway off-ramps listed above, only the I-405 Northbound off-ramp at Century Boulevard is expected to experience an increase of 25 or more trips during the morning or afternoon peak hour as a result of the Project. As such, a freeway off-ramp queuing analysis was conducted for this location. Queue lengths were estimated using the Synchro traffic analysis software package. Intersection counts were collected at the ramp location and a signal timing chart was used to accurately analyze operations. The focus of the queuing analysis was to specifically determine if there is adequate storage capacity at the off-ramp.

Geometric data and volume data for the ramp locations can be found in **Appendix G.2**, *Existing Roadway System*, for the existing conditions (2019), Projected Future Conditions Baseline (2028), and Proposed Project (2028). **Table 4.8-15** presents a summary of the ramp queuing analysis for Existing conditions and the LAMP and ATMP scenarios. The 95th percentile queues were reported for purposes of this analysis. As shown in the table, the freeway ramp queue does not exceed the storage length in any scenario or time period. As a result, the Project is not considered to have a substantial effect at the analyzed location, and is therefore also not considered to have a negative effect on traffic safety.

Table 4.8-15
Summary of Freeway Ramp Queueing Analysis for Existing Conditions, Projected Future Conditions Baseline (2028), and Proposed Project (2028)

Location	Ramp Storage Length (feet)	Time Period	Existing Conditions (2019)		Projected Future Conditions Baseline (2028)		Proposed Project (2028)	
			95th Percentile Queue Length (ft)	Substantial Effect?	95th Percentile Queue Length (ft)	Substantial Effect?	95th Percentile Queue Length (ft)	Substantial Effect?
I-405 Northbound Century Boulevard Off-Ramp	1,260	AM	325	No	375	No	400	No
		PM	275	No	425	No	425	No
Source: Fehr and Peers, 2020.								

4.8.5.5.2 Mitigation Measures

Because the proposed Project would result in a ***less than significant impact*** regarding transportation hazards, no mitigation is required.

4.8.5.5.3 Significance of Impact After Mitigation

As indicated above, no mitigation is required to address transportation hazards. The proposed Project would result in a ***less than significant impact***.

4.8.6 Cumulative Impacts

In accordance with CEQA, a project's cumulative impacts are based on an assessment of whether the "incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects." (Public Resources Code, § 21083, subd. (b)(2)). As described earlier in Section 4.8.1.1, a Projected Future Conditions Baseline (2028) was used to evaluate the transportation-related impacts of the proposed Project. As described therein, and also noted in the Analytical Framework discussion at the beginning of Chapter 4, the 2028 Projected Future Conditions Baseline (2028) reflects the fact that the ground transportation system improvements associated with the LAX Landside Access Modernization Program will have been completed by 2028, the horizon year of the proposed Project. Also included in the Projected Future Conditions Baseline (2028) is the Airport Metro Connector 96th Street Transit Station. Those improvements will substantially alter the current ground transportation system characteristics around LAX. As such, the baseline used for the transportation analysis already accounts for other transportation improvement projects, and the identification of impacts associated with the currently proposed Project provides the basis to measure and evaluate cumulative impacts and assess whether the proposed Project has a cumulatively considerable contribution to the combined impacts. The following describes cumulative impacts associated with the three main topics addressed above relative to project-specific impacts: impacts associated with plans, programs, ordinances, and policies; the generation or inducement of VMT; and, increased hazards.

4.8.6.1 Cumulative Impacts Associated with Plans, Programs, Ordinances, and Policies

Table 4.8-11 and 4.8-12, presented earlier in this section, address the proposed Project's consistency with applicable city and regional transportation-related plans, programs, ordinances, and policies. As detailed in those tables, the proposed Project would not conflict with those plans, programs, ordinances, and policies such that it would result in a significant impact to the environment.

To evaluate the potential for cumulative impacts related to a conflict with a plan, program, ordinance, or policy addressing the circulation system, plans that were considered to be cumulative in scope and which were considered in context of the other ongoing and planned development projects were identified. The SCAG 2020-2045 RTP/SCS and RTIP, Mobility Plan 2035, and the Century Boulevard Streetscape Plan were considered for cumulative consistency as they have jurisdiction over areas affected by the proposed Project, have long-term planning horizons, are broad in scope, and contain plans, programs, ordinances, and policies addressing the circulation system.

4.8.6.1.1 RTP/SCS

As described in Section 4.8.3.1, *Regulatory Setting*, the SCAG 2020-2045 RTP/SCS is a planning document required under state and federal statutes that encompasses six counties in the SCAG region: Los Angeles, Orange, San Bernardino, Riverside, Ventura, and Imperial. The RTP/SCS forecasts long-term transportation demands and identifies policies, actions, and funding sources to accommodate these demands. The RTP/SCS identifies proposed new regional transportation facilities, regional transportation systems management strategies, regional transportation demand management, and regional land use strategies. The RTP/SCS also takes into account the RTIP, which lists all of the regional funded/programmed improvements over a six-year period. Metro provides input to SCAG regarding new proposed transportation system improvements to add to the RTP/SCS, which are also incorporated in the RTIP.

The related development projects identified in Table 3-1 are consistent with the SCAG 2020-2045 RTP/SCS and RTIP. The LAX Northside project is a long-standing approved project, and has been incorporated into regional models. The LAX Landside Access Modernization Program is specifically identified in the RTIP and

accounted for in the RTP/SCS. The only non-airport project identified in Table 3-1, the Airport Metro Connector 96th Street Transit Station, is included in the RTP/SCS as a transit station.

It should be noted that in conjunction with planning for future ground transportation improvements, the RTP/SCS takes into consideration future passenger levels at LAX. As discussed in Chapter 2, *Description of the Proposed Project*, the passenger activity level of 110.8 MAP projected for LAX in 2028 is within the growth level forecast of the 2020-2045 RTP/SCS. That forecast encompasses all of the passenger activity levels projected for LAX, which not only includes the currently proposed Project, but other terminal improvement projects such as those identified in Table 3-1; the Terminals 2 and 3 Modernization Program, the Terminal 4 Modernization Project, the MSC South Project, and the Terminal 6 Renovation. Therefore, the cumulative passenger levels associated with terminal improvement projects would not conflict with the forecast in the 2020-2045 RTP/SCS; no significant cumulative impact would occur.

4.8.6.1.2 Mobility Plan 2035

Mobility Plan 2035 establishes long-range, aspirational transportation goals and policies, with the overall intent to improve mobility. The projects identified in Table 3-1 are almost all airport-facility improvements or focused on improving the surrounding area. Specifically, the LAX Landside Access Modernization Program closely aligns with the Mobility Plan 2035 goals by establishing alternative access to and from the LAX CTA. The Airport Metro Connector 96th Street Transit Station, similar to the LAX Landside Access Modernization Program, is consistent with local and regional mobility goals and with other transportation plans, policies, and regulations.[66] Implementation of the proposed Project, combined with transportation improvements associated with the LAX Landside Access Modernization Program and the Airport Metro Connector 96th Street Transit Station, would provide enhanced accessibility for non-vehicular modes of transportation and would increase accessibility to the airport. Implementation of these projects would be consistent with the goals and objectives of the City's Mobility Plan 2035. These projects would not contribute to cumulative impacts to transit in the Project area. Considered cumulatively, the proposed Project, in combination with ongoing and future projects at LAX and in the immediate vicinity, would not conflict with the Mobility Plan 2035; no significant cumulative impact would occur.

4.8.6.1.3 Century Boulevard Streetscape Plan

As described in Section 4.8.3.1, *Regulatory Setting*, the Century Boulevard Streetscape Plan[67] provides guidelines and standards for streetscape improvements in the public right-of-way and the Pedestrian Amenity Area on private properties along Century Boulevard within the City of Los Angeles. The Century Boulevard Streetscape Plan governs an approximately 1.5-mile segment of Century Boulevard between Sepulveda Boulevard to the west and La Cienega Boulevard to the east (excluding the two end streets). The only project identified in Table 3-1 that relates to the area under the jurisdiction of the Century Boulevard Streetscape Plan is the LAX Landside Access Modernization Program. This project was designed to be consistent with the Century Boulevard Streetscape Plan. The project includes a multi-use bicycle and pedestrian path to facilitate mobility along the Century corridor. Considered cumulatively with the proposed Project, the two projects would not result in an inconsistency with the plan's programs, ordinances, and policies addressing the circulation system; no significant cumulative impact would occur.

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66 Los Angeles County Metropolitan Transportation Authority, *Airport Metro Connector 96th Street Transit Station Draft Environmental Impact Report*, (SCH 2015021009), June 2016. Available: https://media.metro.net/projects_studies/crenshaw/images/AMC_96th_St_Station_Draft_EIR_2016-6.pdf.

67 City of Los Angeles, *Century Boulevard Streetscape Plan*, May 21, 2018. Available: https://planning.lacity.org/plans-policies/overlays/century-boulevard.

4.8.6.2 Cumulative Impacts Associated with VMT

Relative to cumulative employment VMT impacts, the evaluation of the proposed Project's employment VMT impact is based on an efficiency metric (i.e., VMT per employee). As recognized in the *Technical Advisory on Evaluating Transportation Impacts in CEQA,* the combined impacts for a cumulative impacts analysis cannot be added together because the VMT metric employs a denominator.[68] As indicated in the *Technical Advisory*: "A project that falls below an efficiency-based threshold that is aligned with long-term environmental goals and relevant plans would have no cumulative impact distinct from the project impact." The threshold applied to the employment VMT impacts analysis is based on a 15 percent reduction in VMT from baseline levels, which is consistent with the threshold set forth in the TAG and is also recognized in the *Technical Advisory*. As indicated in Section 4.8.5.2.3, implementation of the VMT reduction strategies presented in Section 4.8.5.2.2 would reduce the project-related VMT per employee for the proposed Project to a level that is 15 percent or more below the Projected Future Conditions Baseline (2028) VMT; specifically, mitigation would reduce the per capita VMT 20.4 VMT, or less, per employee. Based on the above, no cumulative impact would occur relative to employment VMT. It should be noted that further declines in this VMT rate may occur after 2028 consistent with regional efforts to reduce driving and increase the use of transit and active transportation. However, increases are also possible due to the influence that economic activity and other factors have on vehicle travel as documented in 2018 Progress Report, California's Sustainable Communities and Climate Protection Act, California Air Resources Board, November 2018.[69]

For passenger VMT, the Projected Future Conditions Baseline (2028) includes all the passenger activity projected to occur at that time. As noted above in Section 4.8.6.1, the passenger activity associated with other development projects at LAX, such as the various terminal projects indicated in Table 3-1, are already accounted for in the Projected Future Conditions Baseline (2028). As such, there would be no significant cumulative passenger VMT impacts beyond what is already accounted for in the baseline. Relative to probable future passenger growth that would occur subsequent to 2028, the nature and level of increased VMT would generally be in proportion to the impact identified for the proposed Project in 2028. As explained in Section 4.8.5.3, the increase in passenger VMT associated with the proposed Project, as compared to passenger VMT in the Projected Future Conditions Baseline (2028), is primarily attributable to the 5.8 additional lane miles that would occur with the Project's proposed roadway system improvements. As future passenger levels increase beyond 2028, the total passenger VMT would also increase from the additional passengers on that roadway system. The increase in total passenger VMT would be generally proportional to the increase in MAP, assuming the mode splits (i.e., percentages of passengers driving their own vehicles, taking TNCs, taking shuttles, using rental cars, taking transit, etc.) and mode assignments (i.e., percentages of vehicles going to/from the CTA, or the ITFs, or the CONRAC, etc.) do not change substantially from 2028 conditions. As such, there would be no cumulative passenger VMT impact in 2028 beyond what is already identified for that year, but total passenger VMT would increase in subsequent years. Based on the threshold of significance for passenger VMT being no net increase over baseline conditions, that increase would represent a significant cumulative impact for passenger VMT. As described above in Section 4.8.5.3, VMT reduction strategies are proposed as mitigation, but would not reduce the impact to less than significant. Such would also be the case for the cumulative impact, which would be significant and unavoidable.

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[68] State of California, Governor's Office of Planning and Research, *Technical Advisory on Evaluating Transportation Impacts in CEQA,* December 2018. Available: https://www.opr.ca.gov/docs/20190122-743_Technical_Advisory.pdf.

[69] California Air Resources Board, *2018 Progress Report, California's Sustainable Communities and Climate Protection Act,* November 2018. Available: https://ww2.arb.ca.gov/sites/default/files/2018-11/Final2018Report_SB150_112618_02_Report.pdf.

Cumulative induced VMT impacts would be very similar to those described above for passenger VMT impacts. The proposed roadway system improvements would result in short-term and long-term induced VMT increases. Such increases on a cumulative basis in 2028 are already accounted for in the analysis presented above in Section 4.8.5.4, and the total induced VMT increases beyond 2028 would likely rise in conjunction with continued growth in traffic around LAX and in the region. As indicated in Section 4.8.5.4.2, there are no feasible mitigation measures available for induced VMT impacts. As such, the cumulative impact related to induced VMT would be significant and unavoidable.

Overall, it is anticipated that there would be significant cumulative impacts related to passenger VMT and that the proposed Project would have a cumulatively considerable contribution to that impact. The significant cumulative impact is being driven primarily by the proposed Project and no other mitigation beyond that presented above in MM-T (ATMP)-1 is feasible.

4.8.6.3 Cumulative Impacts Associated with Hazards

As described above in Section 4.8.5.5, the impact pertains to whether there would be a substantial increase in hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses. From a design standpoint, the only other notable project nearby is the LAX Landside Access Modernization Program, which includes roadway improvements, an APM, ITFs, and a CONRAC, all of which have undergone the necessary design review and approval relative to meeting applicable safety standards. Such would also be the case for the proposed Project. As such, there would be no cumulative safety hazard impacts related to geometric design.

Relative to freeway safety considerations, Section 4.8.5.5.1 above presents a freeway safety analysis that is based on 2028 conditions and includes future projects and future traffic growth, which represents future cumulative conditions. The analysis identified one freeway ramp, specifically the offramp from northbound I-405 at Century Boulevard, that met the screening criterion for conducting a freeway ramp safety analysis. The analysis concluded that there would be no significant impact on traffic safety at that ramp.

4.8.7 Summary of Impacts

Table 4.8-16 summarizes the impact determinations of the proposed Project related to transportation, as described above in Sections 4.8.5 and 4.8.6. Impact determinations are based on the significance criteria presented in Section 4.8.4, and the information and data sources cited throughout Section 4.8.

Table 4.8-16
Summary of Impacts and Mitigation Measures Associated with the Proposed Project Related to Transportation

Environmental Impacts	Impact Determination	Mitigation Measures	Level of Significance After Mitigation
Impact 4.8-1: The proposed Project would not conflict with a program, plan, ordinance, or policy addressing the circulation system such that it would result in a significant impact to the environment. This would be a ***less than significant impact.***	Less than Significant	No mitigation is required	Less than Significant
Impact 4.8-2: The proposed Project would generate VMT per employee exceeding 15 percent below the Projected Future Conditions Baseline (2028) VMT per employee (i.e., 20.4). This would be a ***significant impact***.	Significant	MM-T (ATMP)-1. VMT Reduction Program.	Less than Significant
Impact 4.8-3: The proposed Project would increase total passenger VMT over the Projected Future Conditions Baseline (2028). This would be a ***significant impact***.	Significant	MM-T (ATMP)-1. VMT Reduction Program.	Significant and Unavoidable
Impact 4.8-4: The proposed Project would induce substantial additional VMT compared to the Projected Future Conditions Baseline (2028). This would be a ***significant impact***.	Significant	No feasible mitigation available	Significant and Unavoidable
Impact 4.8-5: The proposed Project would not substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses. This would be a ***less than significant impact***.	Less than Significant	No mitigation is required	Less than Significant

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4.9 Utilities

4.9.1 Water Supply

4.9.1.1 Introduction

The water supply evaluation addresses anticipated water consumption associated with the proposed Project and associated impacts to water supply. Components of the proposed Project that would use water include construction activities; operation of Concourse 0, Terminal 9, and associated facilities, including the new APM station and Terminal 9 parking facility; and Project-related landscaping. Operation of the proposed airfield and roadway improvements would not consume water. This section also addresses whether the proposed Project would require or result in the relocation or construction of new or expanded water facilities, the construction or relocation of which could cause significant environmental effects.

4.9.1.2 Methodology

An estimate of the water demand of the proposed Project was developed by the Los Angeles Department of Water and Power (LADWP) as part of a Water Supply Assessment (WSA) prepared for the proposed Project (provided in **Appendix H)**. The purpose of the WSA was to determine whether water demand associated with the proposed Project could be met by LADWP. The methodology used by LADWP for calculating Project-related water demand is outlined in the WSA. As described in the WSA, the methodology estimated water demand by applying factors to new building and landscaped area and then adjusting the factors to account for water conservation efforts and efficiencies from appliance and fixture types. LADWP's calculations of indoor water use were based on sewer generation factors published by the City of Los Angeles Department of Public Works, Bureau of Sanitation (LASAN); outdoor landscape water demand was estimated per California Code of Regulations' Model Water Efficient Landscape Ordinance.[1] Based on the estimated water demand in the WSA, the potential for the proposed Project to require or result in the relocation or construction of new or expanded water facilities, such as pipelines, was evaluated in this Draft EIR.

4.9.1.3 Existing Conditions

4.9.1.3.1 Regulatory Setting

4.9.1.3.1.1 State

Urban Water Management Planning Act

The State of California's Urban Water Management Planning Act of 1984[2] requires all public water suppliers that provide municipal and industrial water to more than 3,000 customers, or supply more than 3,000 acre-feet per year (AF/Y) of water, to prepare and adopt an Urban Water Management Plan (UWMP). The UWMP must be prepared every five years and submitted to the Department of Water Resources (DWR) for review. An UWMP is intended to forecast future water demand and supply under normal and dry conditions. The Urban Water Management Planning Act has been modified several times in response to water shortages, droughts, and other factors. The Water Conservation Act of 2009

[1] California Code of Regulations, Title 23, Division 2, *Chapter 2.7, Model Water Efficient Landscape Ordinance*. Available: https://govt.westlaw.com/calregs/Browse/Home/California/CaliforniaCodeofRegulations?guid=I55B69DB0D45A11DEA95CA4428EC25FA0&originationContext=documenttoc&transitionType=Default&contextData=(sc.Default).

[2] California Water Code, Sections 10610-10656, Urban Water Management Planning.

amended the Urban Water Management Planning Act to call for a statewide reduction of 20 percent in urban water use by the year 2020. An amendment in 2014 requires water suppliers to provide narrative descriptions of their water demand management measures and water shortage contingency plans.

Senate Bill 606 and Assembly Bill 1668

Senate (SB) 606 and Assembly Bill (AB) 1668 provide complementary authorities and requirements regarding water conservation, and were approved as a package by Governor Brown on May 31, 2018.

SB 606 adds new requirements to the Urban Water Management Planning Act, with key provisions that require UWMPs to incorporate a drought risk assessment, and urban water suppliers to prepare a water shortage contingency plan and perform an annual water demand and supply assessment.

AB 1668 requires the State Water Resources Control Board, in coordination with the Department of Water Resources, to adopt long-term standards for the efficient use of water, and performance measures for commercial, industrial, and institutional water use on or before June 30, 2022.

Senate Bill 610

SB 610, which includes amendments to Sections 10910–10915 of the State Water Code, requires a lead agency to request a WSA from the local water supplier prior to approval of projects that are subject to CEQA and meet the following criteria:

- a proposed residential development of more than 500 dwelling units;
- a proposed shopping center or business establishment of more than 500,000 square feet of floor space or employing more than 1,000 persons;
- a proposed commercial office building of more than 250,000 square feet of floor space or employing more than 1,000 persons;
- a proposed hotel or motel of more than 500 rooms;
- a proposed industrial, manufacturing, or processing plant or industrial park of more than 40 acres of land, more than 650,000 square feet of floor area, or employing more than 1,000 persons;
- a mixed-use project that falls in one or more of the above-identified categories; or
- a project not falling in one of the above-identified categories but that would demand water equal to or greater than the amount required by a 500-dwelling unit project.

A WSA is intended to indicate that the supplier has existing or planned water supplies adequate to meet the demands of the proposed project, and shall be incorporated into the Draft EIR for the project. LADWP prepared and adopted a WSA for the proposed Project (see **Appendix H**).

Sustainable Groundwater Management Act

The Sustainable Groundwater Management Act, passed in 2014, provides local agencies with the authority to adopt groundwater management plans. The Act requires the formation of local groundwater sustainability agencies that would develop and implement plans to achieve long-term groundwater sustainability.

The Water Replenishment District (WRD) of Southern California was created with authority for the West Coast Groundwater Basin, which underlies approximately 160 square miles of coastal Los Angeles County, including the Project area. WRD, in coordination with other basin stakeholders, including LADWP, developed the Groundwater Basins Master Plan (GBMP) to guide the use and maintenance of the West

Coast and Central groundwater basins. The GBMP identifies opportunities to develop supplemental replenishment water supplies in order to reduce imported water use.[3]

LADWP also owns groundwater rights in the San Fernando, Sylmar, and Eagle Rock basins for which the Upper Los Angeles River Area Watermaster is the groundwater sustainability agency.

Green Buildings Standards

The 2019 California Green Building Standards Code (CALGreen) is found in Part 11, Title 24 of the California Code of Regulations.[4] The purpose of CALGreen is to "improve public health, safety, and general welfare through enhanced design and construction of buildings using concepts which reduce negative impacts and promote those principles which have a positive environmental impact and encourage sustainable construction practices."[5] CALGreen identifies mandatory building efficiency and conservation measures and voluntary measures that may be incorporated into the design of buildings. Relative to water usage, CALGreen requires that every new building constructed in California reduce indoor water consumption by 20 percent compared to a typical baseline condition building (as calculated under CALGreen), contains specific requirements for plumbing fixtures, and includes general requirements regarding indoor and outdoor water usage such as separate indoor and outdoor water meters for nonresidential buildings.

4.9.1.3.1.2 Local

City of Los Angeles Urban Water Management Plan

LADWP adopted the City's 2015 UWMP in June 2016, which serves as a master plan for water supply and resources management consistent with the City's goals and policy objectives. As indicated in the UWMP, LADWP develops long-term water projections based on growth in water use for the entire service area.[6] The current UWMP evaluates a water system facing drought conditions and responds to policy actions, such as Mayor Eric Garcetti's Executive Directive No. 5 Emergency Drought Response, and Sustainable City pLAn, which promotes investment in conservation, recycling, and local source development, and sets a goal of a 25 percent reduction in per capita water use by 2035. The UWMP discusses conservation strategies to help achieve this goal.

L.A.'s Green New Deal

L.A.'s Green New Deal, an update to the Mayor's 2015 Sustainable City pLAn, contains strategies for the City to increase sustainability and address current and future climate change impact. The Green New Deal sets aspirations for numerous target areas and prioritizes water conservation and local sourcing of water. The Green New Deal identifies the following targets and initiatives related to water supply and conservation: [7]

- Source 70 percent of L.A.'s water locally (from a baseline of 15 percent in fiscal year 2013/2014), and capture 150,000 AF/Y of stormwater by 2035
- Reduce LADWP purchases of imported water by 50 percent from 2013/2014 levels by 2025

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[3] Water Replenishment District of Southern California, *Groundwater Basins Master Plan – Final Report,* prepared by CH2M in associated with RMC Water and Environment, September 2016. Available: https://www.wrd.org/sites/pr/files/GBMP_FinalReport_Text%20and%20Appendicies.pdf.

[4] 24 California Code of Regulations, Part 11, California Building Standards Commission, *2019 California Green Building Standards Code (CALGreen)*. Available: https://www.dgs.ca.gov/BSC/Resources/Page-Content/Building-Standards-Commission-Resources-List-Folder/CALGreen.

[5] California Department of Housing and Community Development, *Homepage: CALGreen Compliance*. Available: https://www.hcd.ca.gov/building-standards/calgreen/index.shtml, accessed May 16, 2020.

[6] City of Los Angeles, Department of Water and Power, *2015 Urban Water Management Plan*, June 2016. Available: https://www.ladwp.com/cs/idcplg?IdcService=GET_FILE&dDocName=QOELLADWP005416&RevisionSelectionMethod=LatestReleased.

[7] City of Los Angeles, Office of the Mayor, Mayor Eric Garcetti, *L.A.'s Green New Deal: Sustainable City pLAn, 2019*. Available: https://plan.lamayor.org/sites/default/files/pLAn_2019_final.pdf.

- Recycle 100 percent of all wastewater for beneficial reuse by 2035
- Reduce potable water use per capita by 22.5 percent by 2025 and 25 percent by 2035

City of Los Angeles Green Building Code (LAGBC)

In December 2013, the Los Angeles City Council approved Ordinance No. 182,849, which updated Chapter IX of the Los Angeles Municipal Code (LAMC) to incorporate portions of the 2013 CALGreen Code and add other conservation-related measures to the LAGBC for residential and non-residential development. The requirements of the adopted LAGBC, as updated (2017),[8] apply to new building construction, building renovations, and building additions within the City of Los Angeles. Key measures in the LAGBC include indoor and outdoor water-conserving requirements for new and altered buildings.

Executive Directive No. 25

On February 10, 2020, Los Angeles Mayor Eric Garcetti issued Executive Directive No. 25 to accelerate L.A.'s Green New Deal and adopt new steps and stronger accountability measures to achieve the City's climate objectives.[9] Regarding water, this directive requires City departments to provide criteria to advance projects that meet the local water goals established in L.A.'s Green New Deal. The Directive also requires LADWP to expedite the replacement of existing water meters with smart meters, among other measures.

One Water LA

In 2018, the City prepared the One Water LA 2040 Plan, which is a comprehensive water resources planning document to guide the City's water resources approach through 2040. The One Water LA 2040 Plan considers all of the City's water resources – from surface water, groundwater, potable water, wastewater, recycled water, dry weather runoff, and stormwater – as "One Water." The Plan includes water management goals, which are aligned with the 2015 UWMP, and identifies opportunities to create integrated water management that helps achieve UWMP goals.[10]

LAWA Sustainability Plans and Guidelines

On September 7, 2017, LAWA adopted the Sustainable Design and Construction Policy,[11] which requires new buildings and major building renovation projects to achieve a minimum of LEED® Silver certification. New LAWA or tenant building construction and building renovation projects that are not eligible for LEED® certification – such as runways, taxiways, roadways, bridges, surface parking, and stand-alone parking structures – or are exempted by LAWA's Sustainability Review Committee, are required to adhere to LAWA's Sustainable Design and Construction Requirements, which incorporate sustainability concepts from the LEED® system as well as the LAGBC and other airport sustainability guidelines.[12] The Requirements, which are incorporated into the LAWA Design and Construction Handbook (DCH),[13] establish technical standards for new construction and renovation projects in a number of categories, including water efficiency and conservation. The Sustainable Design and Construction Policy will ensure

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8 City of Los Angeles, Los Angeles Municipal Code, Chapter IX, Article 9, *Green Building Code*, as amended.

9 City of Los Angeles, Office of the Mayor, Mayor Eric Garcetti, *Executive Directive No. 25, Subject: L.A.'s Green New Deal: Leading by Example*, February 10, 2020. Available: https://www.lamayor.org/sites/g/files/wph446/f/page/file/20200210ExecutiveDirective25.pdf.

10 City of Los Angeles, LA Sanitation & Environment and Department of Water and Power, *One Water LA 2040 Plan – Volume 1 Summary Report, Final Draft*, prepared by Carollo, et. al., April 2018. Available: https://www.lacitysan.org/cs/groups/sg_owla/documents/document/y250/mdi2/~edisp/cnt026188.pdf.

11 City of Los Angeles, Los Angeles World Airports, *LAWA Sustainable Design and Construction Policy*, September 7, 2017. Available: https://www.lawa.org/-/media/lawa-web/tenants411/file/lawa-sustainable-design-and-construction-policy.ashx.

12 City of Los Angeles, Los Angeles World Airports, *Los Angeles International Airport Sustainable Design & Construction Requirements*, August 4, 2017. Available: https://www.lawa.org/-/media/lawa-web/tenants411/file/sustainable-design-construction-requirements.ashx.

13 City of Los Angeles, Los Angeles World Airports, *2020 Design and Construction Handbook (DCH), Version 1.0,* June 30, 2020. Available: https://www.lawa.org/en/lawa-businesses/lawa-documents-and-guidelines/lawa-design-and-construction-handbook.

that all projects at LAWA facilities are environmentally responsible and resource-efficient throughout a structure's life-cycle, from siting to design, construction, operation, maintenance, and renovation, reflecting LAWA's commitment to sustainability.

LAWA's *Sustainability Action Plan (SAP)*[14] is a detailed action plan for promoting sustainability to ensure a healthy, prosperous future for the region. The SAP provides sustainability goals and targets for LAX to help meet the City's overall sustainability goals. One focus of the SAP is on water management, leading to efficient operations and reduced water use. Specifically, the SAP identifies a goal to increase reclaimed water use by 35 percent and decrease potable water use by 30 percent by 2035, and to eliminate potable water consumption for non-potable uses such as landscaping and industrial uses by 2045. The SAP includes targets to require new projects to be compatible with the use of reclaimed water unless infeasible and construction projects to use reclaimed water where supply lines exist nearby.

4.9.1.3.2 Environmental Setting

Los Angeles Department of Water and Power (LADWP)

LADWP is responsible for supplying, treating, and distributing water for domestic, industrial, agricultural, and firefighting purposes within the City. The LADWP obtains its water supplies from three major sources: (1) the Owens Valley and Mono Basin via the Los Angeles Aqueduct (LAA); (2) northern California and Colorado River imports purchased from the Metropolitan Water District of Southern California (MWD); and (3) local groundwater basins. In addition, some wastewater within the LADWP service area is recycled for reuse as irrigation or industrial water, or for use in seawater intrusion barriers used to protect groundwater supplies. The average distribution of sources during 2014–2018 was 59 percent purchased from MWD, 27 percent from the LAA, 12 percent from groundwater, and 2 percent from recycled water.[15] Water demand not met by the LAA, groundwater, and recycled water is supplied through LADWP purchases from MWD.

In the early 20th century, LADWP constructed the LAA to import water from the eastern Sierra Nevada. The current capacity of the LAA is 775 cubic feet per second (cfs).[16] Past allocations from LAA have exceeded 400,000 AF/Y. However, due to allocations for environmental restoration obligations, local uses, and other losses, the City of Los Angeles has decreased its LAA supply and uses approximately 43 percent of the total runoff in the Eastern Sierra Nevada in an average year.[17] The available supply is highly dependent on snowfall in the eastern Sierra Nevada; therefore, water delivery from the LAA varies, with greater deliveries in wet years and less in dryer years.

The City also owns groundwater rights in the San Fernando, Sylmar, Eagle Rock, Central, and West Coast Basins totaling approximately 110,000 AF/Y.[18] Water quality constraints have limited the usage of groundwater, although LADWP is engaged in management efforts to maintain future availability.

The City's UWMP includes scenarios for increasing stormwater capture within the City for the purpose of recharging local groundwater basin levels, with a conservative scenario increasing stormwater capture

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[14] City of Los Angeles, Los Angeles World Airports, *LAWA Sustainability Action Plan*, 2019. Available: https://cloud1lawa.app.box.com/s/63i2teszgnld5aws68xbou6yc0inl5rp.

[15] City of Los Angeles, Department of Water and Power, *Briefing Book 2018-19*. Available: https://www.ladwp.com/cs/idcplg?IdcService=GET_FILE&dDocName=OPLADWPCCB629209&RevisionSelectionMethod=LatestRelease.

[16] One cfs is approximately 724.45 AF/Y.

[17] City of Los Angeles, Department of Water and Power, *2015 Urban Water Management Plan*, June 2016. Available: https://www.ladwp.com/cs/idcplg?IdcService=GET_FILE&dDocName=QOELLADWP005416&RevisionSelectionMethod=LatestReleased.

[18] City of Los Angeles, Department of Water and Power, *2015 Urban Water Management Plan*, June 2016. Available: https://www.ladwp.com/cs/idcplg?IdcService=GET_FILE&dDocName=QOELLADWP005416&RevisionSelectionMethod=LatestReleased.

from the existing 64,000 AF/Y to 132,000 AF/Y, and an aggressive scenario increasing stormwater capture to 178,000 AF/Y by 2035.[19]

In fiscal year 2018/2019, LADWP delivered over 34,000 AF/Y of recycled water to end users and for environmental uses.[20] The UWMP set a goal of increasing recycled water supply to approximately 75,000 AF/Y by 2040; LADWP is planning to accomplish this by increasing recycled water production and uses. Recycled water in the LAX area is provided by the West Basin Municipal Water District's (WBMWD) Edward C. Little Water Recycling Facility (ECLWRF), some of which is used to irrigate landscaping at LAX.[21]

LADWP maintains a number of potable water lines throughout the area, mostly within street rights-of-way. The most substantial lines in the LAX area are along Century Boulevard and Sepulveda Boulevard. LADWP also maintains recycled water lines that serve the LAX area. These recycled water lines provide reclaimed water to LAX, which uses reclaimed water for landscape irrigation and construction-related dust control.

LAX

In 2018, operations across all of LAX used approximately 478.6 million gallons (1,468.9 AF) of potable water, which is equivalent to approximately 5.5 gallons per passenger. Per capita water consumption at LAX has been declining in recent years; water use per passenger has decreased by almost 47 percent since 2011. The decline in potable water use is due to the installation of low flow fixtures, introduction of drought-tolerant landscaping, and increased use of reclaimed water. Approximately 47 percent of all LAX landscaped areas, or about 50 acres, is irrigated with reclaimed water. In total, over 27.5 million gallons (84.5 AF) of reclaimed water was used in 2018.[22]

As discussed above, LAWA has established a goal to increase reclaimed water use by 35 percent and decrease potable water use by 30 percent by 2035. To facilitate this, LAWA is partnering with LADWP and the City's Bureau of Sanitation (LASAN) to provide high-quality reclaimed water to LAX through the construction and operation of the Advanced Water Purification Facility (AWPF) at the HWRP, which will produce reclaimed water that will be conveyed to the Central Terminal Area (CTA) via a new pipeline connection in Pershing Drive.[23] The reclaimed water will meet quality requirements established for domestic use at LAX terminals and industrial use at the Central Utility Plant.[24] As part of the LAWA Capital Improvement Program, additional reclaimed water pipelines will be constructed at LAX to facilitate the transfer of recycled water from the City's HWRP. Construction of these reclaimed water pipelines within the CTA will include extensions of the main reclaimed water line, ending with stub-outs at Terminal 1.5 and Terminal 6, which will allow for future connections to the east.

In addition to reclaimed water use for LAX operations, LAX construction projects that are proximate to reclaimed water sources at LAX use reclaimed water for dust control.

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19 City of Los Angeles, Department of Water and Power, *2015 Urban Water Management Plan*, June 2016. Available: https://www.ladwp.com/cs/idcplg?IdcService=GET_FILE&dDocName=QOELLADWP005416&RevisionSelectionMethod=LatestReleased.

20 City of Los Angeles, Department of Water and Power, *Recycled Water Annual Report 2018-2019*. Available: https://www.ladwp.com/ladwp/faces/ladwp/aboutus/a-water/a-w-recycledwater/a-w-rw-annualreport, accessed February 17, 2020.

21 Approximately 47 percent of all LAX landscaped areas, or about 50 acres, is irrigated with reclaimed water.

22 City of Los Angeles, Los Angeles World Airports, *Los Angeles World Airports 2018 Sustainability Report*. Available: https://cloud1lawa.app.box.com/v/2018-Sustainability-Report.

23 City of Los Angeles, Los Angeles World Airports, *LAWA Sustainability Action Plan*, 2019. Available: https://cloud1lawa.app.box.com/s/63i2teszgnld5aws68xbou6yc0inl5rp.

24 Los Angeles World Airports, *Report to the Board of Airport Commissioners, SUBJECT: Authorization to Advertise Notice Inviting Bids for the Construction of Recycled Water Extension Project at Los Angeles International Airport*, May 21, 2020. Available: https://lawa.granicus.com/MetaViewer.php?view_id=&event_id=1367&meta_id=42164.

4.9.1.4 Thresholds of Significance

A significant impact related to water supply would occur if the proposed Project would:

Threshold 4.9.1-1 Require or result in the relocation or construction of new or expanded water facilities, the construction or relocation of which could cause significant environmental effects.

Threshold 4.9.1-2 Have insufficient water supplies available to serve the Project and reasonably foreseeable future development during normal, dry, and multiple dry years.

These thresholds are from Appendix G of the State CEQA Guidelines.

4.9.1.5 Project Impacts

4.9.1.5.1 Impact 4.9.1-1

Summary Conclusion for Impact 4.9.1-1: The proposed Project would not require or result in the relocation or construction of new or expanded water facilities, the construction or relocation of which could cause significant environmental effects. This would be a *less than significant impact* for construction and operations.

4.9.1.5.1.1 Construction

Implementation of the proposed Project would include water consumption for various construction-related purposes, including concrete production, equipment cleaning, and activities such as pavement saw-cutting and dust control. Construction of the proposed Project would be in accordance with LAWA's Sustainable Design and Construction Policy, the LAX Sustainable Design and Construction Requirements, and the DCH. The DCH identifies applicable City of Los Angeles building and safety codes, State Water Resources Control Board permits, and other technical specifications for building design and construction as it pertains to water use and water supply systems. The LAX Sustainable Design and Construction Requirements and the DCH both include a requirement for the use of reclaimed water for dust control, as feasible, when those activities are located in proximity to reclaimed water sources.[25,26] This requirement is applicable to the proposed airfield improvements, which would be located in proximity to existing reclaimed water supplies, as identified in Chapter 2, *Description of the Proposed Project*.

The proposed Project is located in an urbanized portion of the City of Los Angeles that is well served by water distribution infrastructure. Existing potable water mains, trunk lines, and service lines convey potable water throughout the Project area. Potable water would be provided to Concourse 0 via an existing high-pressure water main near the intersection of Century Boulevard and Sepulveda Boulevard, which currently feeds the CTA. Existing water supply pipelines do not have adequate pressure and capacity to supply water to Terminal 9. There are several options that would result in adequate conveyance pressure and capacity, including extending existing lines east to the Terminal 9 site (via Sepulveda Boulevard/Century Boulevard or 98th Street/Jetway Boulevard) or upgrading existing lines in Century Boulevard to serve the proposed Project. Under either option, the pipeline(s) would be located within existing street rights-of-way and in an area that is currently developed and does not contain any sensitive resources (e.g., cultural resources, biological resources). Moreover, the area where the new or

[25] City of Los Angeles, Los Angeles World Airports, *Los Angeles International Airport Sustainable Design & Construction Requirements*, August 4, 2017. Available: https://www.lawa.org/-/media/lawa-web/tenants411/file/sustainable-design-construction-requirements.ashx.

[26] City of Los Angeles, Los Angeles World Airports, *2020 Design and Construction Handbook (DCH), Version 1.0,* Chapter 4, Division 1, Subsection 1.5.B, June 30, 2020. Available: https://www.lawa.org/en/lawa-businesses/lawa-documents-and-guidelines/lawa-design-and-construction-handbook.

upgraded pipeline(s) would be installed would already be under construction as part of the proposed Project. Therefore, construction of either option would occur as part of the overall construction of the proposed Project and would not result in any new environmental impacts.

As described in Chapter 2, *Description of the Proposed Project,* and illustrated in Figure 2-25 in that chapter, the proposed Project would extend existing or planned reclaimed water lines in the CTA to Concourse 0 and Terminal 9. Air pollutant and greenhouse gas emissions from construction of the pipelines are accounted for in the analyses provided in Section 4.1.1, *Air Quality*, and Section 4.4, *Greenhouse Gas Emissions*, respectively. Construction of the Project-related reclaimed water line extensions would not have any additional environmental impacts, as there are no sensitive resources (e.g., cultural resources, biological resources, noise-sensitive land uses) located along the proposed alignments of the new reclaimed water lines. As a result, the construction of reclaimed water lines from the CTA to Concourse 0 and Terminal 9 would not cause significant environmental effects.

Construction-related impacts related to the relocation or construction of new or expanded water facilities, including for both potable and reclaimed water, would be ***less than significant***.

4.9.1.5.1.2 Operations

As noted in Section 4.9.1.5.1.1, provision of potable water to serve Terminal 9 water demands would require new or upgraded local water pipelines in order to meet the capacity needs. In addition, the proposed Project would extend existing or planned reclaimed water lines in the CTA to Concourse 0 and Terminal 9. As discussed in Section 4.9.1.5.1.1, the construction of potable water extensions and reclaimed water line extensions would not cause significant environmental effects. As a result, this impact would be ***less than significant***.

4.9.1.5.1.3 Mitigation Measures

Because the proposed Project would result in a ***less than significant impact*** related to water distribution facilities, no mitigation is required for construction or operations.

4.9.1.5.1.4 Significance of Impact After Mitigation

As indicated above, no mitigation is required related to water distribution facilities. The proposed Project would result in a ***less than significant impact*** for construction and operations.

4.9.1.5.2 Impact 4.9.1-2

Summary Conclusion for Impact 4.9.1-2: The proposed Project would have sufficient water supplies available to serve the Project and reasonably foreseeable future development during normal, dry, and multiple dry years. This would be a *less than significant impact* for construction and operations.

4.9.1.5.2.1 Construction

As discussed above in Section 4.9.1.5.1.1, implementation of the proposed Project would require water for various construction-related purposes, including concrete production, equipment cleaning, and activities such as pavement saw-cutting and dust control. These discrete construction activities would consume water in limited volumes and on an as-needed basis depending on the construction task. For instance, water for saw cutting would only be used during active saw operation and only for tasks that require concrete, stone, or metal cutting, and water for dust control would only be used periodically during active grading operations over uncovered exposed-earth sites.

As noted above and in Chapter 2, *Description of the Proposed Project*, in accordance with the LAX Sustainable Design and Construction Requirements[27] and the DCH,[28] due to the proximity of the proposed airfield improvements to reclaimed water resources, reclaimed water would be used for dust control during construction of these improvements, when feasible based on proximity to reclaimed water sources. Use of reclaimed water during construction would reduce potable water use.

As discussed below in Section 4.9.1.5.2.2, LADWP has indicated that water supply is available to meet the long-term demand of the proposed Project. Since the proposed Project's long-term operational water demand would be greater than the as-needed water use for specific construction activities, sufficient water supplies would be available to supply the construction-related water demand of the proposed Project and impacts would be ***less than significant***.

4.9.1.5.2.2 Operations

The proposed Project would generate a demand for potable water at Concourse 0 and Terminal 9 for restrooms, office/operational areas, and commercial program facilities (i.e., concessions); the proposed Automated People Mover (APM) station; Terminal 9 parking facility cleaning; fire water systems; Concourse 0 and Terminal 9 cooling; and landscaping. As described above in Section 4.9.1.3.1.1, there are several state Senate and Assembly bills pertaining to regional water supply planning and analysis, with the most relevant being SB 610, which requires preparation of a WSA to evaluate whether the water demand of individual development projects, along with the other anticipated future regional water demands, can be met by the future regional water supply. LAWA requested that LADWP prepare a WSA for the proposed Project in accordance with the requirements of SB 610, which was completed by LADWP and approved by the Board of Water and Power Commissioners on May 26, 2020 (see **Appendix H**). The WSA estimated the total water demand associated with the proposed Project, accounting for both required water conservation measures and additional water commitments made by LAWA, less existing water consumption associated with facilities that would be removed as part of the proposed Project. Based on these considerations, LADWP estimated that the proposed Project would have a net increase in water demand of 95.3 AF/Y. **Table 4.9.1-1** provides the results of the WSA and identifies the net water demand associated with the proposed Project.

Table 4.9.1-1
Proposed Project Water Usage

	Quantity	Unit	Water Use Factor[1] (gpd/unit)	Base Demand (gpd)	Required Water Savings[2] (gpd)	Proposed Water Demand	
						gpd	AF/Y
Proposed Project Water Demand[3]							
Concourse 0							
Airline Facilities	320,760	sf	0.05	16,038			
Department of Homeland Security	158,814	sf	0.05	7,941			
Commercial Program	96,000	sf	0.05	4,800			
Ancillary	6,840	sf	0.05	342			
Building Services	32,760	sf	0.05	1,638			
Circulation	173,280	sf	0.05	8,664			

[27] City of Los Angeles, Los Angeles World Airports, *Los Angeles International Airport Sustainable Design & Construction Requirements*, August 4, 2017. Available: https://www.lawa.org/-/media/lawa-web/tenants411/file/sustainable-design-construction-requirements.ashx.

[28] City of Los Angeles, Los Angeles World Airports, *2020 Design and Construction Handbook (DCH), Version 1.0,* Chapter 4, Division 1, Subsection 1.5.B, June 30, 2020. Available: https://www.lawa.org/en/lawa-businesses/lawa-documents-and-guidelines/lawa-design-and-construction-handbook.

Table 4.9.1-1
Proposed Project Water Usage

	Quantity	Unit	Water Use Factor[1] (gpd/unit)	Base Demand (gpd)	Required Water Savings[2] (gpd)	Proposed Water Demand	
						gpd	AF/Y
Office	487,146	sf	0.12	58,458			
Base Demand Adjustment (Concourse 0)[4]				4,692			
Concourse 0 Total	**1,275,600**	**sf**		**102,573**	**68,804**	**33,769**	**37.83**
Terminal 9							
Airline Facilities	332,316	sf	0.05	16,616			
Department of Homeland Security	219,912	sf	0.05	10,996			
Commercial Program	114,720	sf	0.05	5,736			
Office	159,444	sf	0.12	19,133			
Ancillary	12,960	sf	0.05	648			
Building Services	56,460	sf	0.05	2,823			
Circulation	517,788	sf	0.05	25,889			
Automated People Mover Station	59,400	sf	0.05	2,970			
Base Demand Adjustment (Terminal 9)[4]				1,200			
Terminal 9 Total	**1,473,000**	**sf**		**86,011**	**71,710**	**14,301**	**16.02**
Other Project Components							
Terminal 9 Parking Facility[5]	700,000	sf	0.02	460	0	460	0.52
Cooling Tower Terminal 9[6]	2,333	ton	36	83,148	16,630	66,518	74.51
Landscaping[7]	4,000	sf		374	168	206	0.23
Other Project Components Total				**83,982**	**16,798**	**67,184**	**75.26**
Total Proposed Project Water Demand				**272,566**	**157,312**	**115,254**	**129.11**
Existing Water Use Associated with Facilities to be Removed[3]							
Existing Uses to be Removed[8,9]	306,580	sf	0.05			**15,329**	**17.17**
Net Additional Project-Related Water Demand							
Proposed Project Water Demand				272,566	157,312	115,254	129.11
Less Existing Uses to be Removed						-15,329	-17.17
Less Additional Conservation[9]						-14,866	-16.65
Net Additional Project-Related Water Demand						**85,059**	**95.29**

Source: City of Los Angeles, Department of Water and Power, Water Resources Division, *Water Supply Assessment for the Los Angeles International Airport Airfield and Terminal Modernization Project*, May 26, 2020 (**Appendix H** of this EIR).

Notes:

1 Proposed indoor water uses are based on 2012 City of Los Angeles Department of Public Works, Bureau of Sanitation Sewer Generation Rates table.

2 The proposed Project land uses would be required to conform to City of Los Angeles Ordinance No. 184248, 2013 California Plumbing Code, 2013 California Green Building Code (CALGreen), 2014 Los Angeles Plumbing Code, and 2014 Los Angeles Green Building Code.

3 Provided to LADWP by Los Angeles World Airports in the Request for Water Supply Assessment letter and Scope Confirmation e-mail. See Appendix A of the WSA included in **Appendix H.**

4 Base Demand Adjustment is the estimated savings due to Ordinance No. 180822 accounted for in the current version of Bureau of Sanitation Sewer Generation Rates.

Table 4.9.1-1
Proposed Project Water Usage

	Quantity	Unit	Water Use Factor[1] (gpd/unit)	Base Demand (gpd)	Required Water Savings[2] (gpd)	Proposed Water Demand	
						gpd	AF/Y

[5] It is assumed that the Terminal 9 parking facility would be a covered parking facility. Auto parking water uses are based on City of Los Angeles Department of Public Works, Bureau of Sanitation Sewer Generation Rates table, assuming cleaning 12 times/year.
[6] Assumed to operate 24 hours/day, 7 days/week at 55 percent of chiller capacity.
[7] Landscaping water use is estimated per California Code of Regulations Title 23, Division 2, Chapter 2.7, Model Water Efficient Landscape Ordinance.
[8] Estimated based on 2012 City of Los Angeles Department of Public Works, Bureau of Sanitation Sewer Generation Rates table.
[9] Uses to be removed are described in Chapter 2, *Description of the Proposed Project*.
[10] Water conservation due to additional conservation commitments by Los Angeles World Airports. See **Appendix H**.

Key:
sf- square feet; gpd - gallons per day; AF/Y - acre feet per year

In addition to conforming to code requirements, as described in LAWA's water conservation commitment letter for the proposed Project to LADWP (see Appendix B of the WSA in **Appendix H**) and in Chapter 2, *Description of the Proposed Project*, LAWA has committed to implement the following water conservation measures that are in addition to those required by codes and ordinances:

- High efficiency dual-flush toilets with a flush volume of 1.12 gallons per flush or less;
- Urinals with 0.11 gallons per flush;
- ENERGY STAR-certified residential dishwashers, if feasible, standard or compact with 3.5 gallons/cycle or less;
- Individual sub-metering for domestic water system for each building with the option for future remote data gathering connection;
- Extension of reclaimed water piping to Concourse 0 and Terminal 9 to enable the use of reclaimed water where appropriate;
- Drip subsurface irrigation (micro-irrigation) for landscaping; and
- Drought-tolerant plants for 15 percent of total Project-related landscaping, with the remaining 85 percent consisting of mulch, sand, and other drought-tolerant landscaping elements.

In addition, as noted in Chapter 2, *Description of the Proposed Project,* Concourse 0 and Terminal 9 would be designed to be compatible with the use of reclaimed water per LAWA design protocols. Incorporation of these commitments would result in a saving of 16.65 AF/Y of potable water (see Table 4.9.1-1).

On May 26, 2020, the Board of Water and Power Commissioners adopted the WSA, which concluded that (1) Project-related water demand has been accounted for in the City's overall total demand projections in the City's 2015 UWMP; (2) anticipated water demand for the Project falls within LADWP's 2015 UWMP projected water supplies for normal, single-dry, and multiple-dry years through the year 2040 and is within the LADWP 2015 UWMP's 25-year water demand growth projection; and (3) LADWP has adequate water supplies to meet the proposed water demand of the Project (see **Appendix H**).

Because sufficient water supplies would be available to supply the proposed Project and reasonably foreseeable future development during normal, dry, and multiple dry years, impacts on regional water supply from the proposed Project would be ***less than significant***.

4.9.1.5.2.3 Mitigation Measures

Because the proposed Project would result in a ***less than significant impact*** on regional water supply, no mitigation is required for construction or operations. However, it should be noted that a mitigation measure recommended to reduce greenhouse gas emissions, MM-GHG (ATMP)-5: Landscaping Water, would also reduce potable water consumption by requiring the use of only non-potable water for on-airport landscaping associated with the proposed Project (see Section 4.4, *Greenhouse Gas Emissions*).

4.9.1.5.2.4 Significance of Impact After Mitigation

As indicated above, no mitigation is required related to regional water supply. The proposed Project would result in a ***less than significant impact*** for construction and operations.

4.9.1.6 Cumulative Impacts

The geographical area of the cumulative impacts analysis for the City's water supply and distribution system is the City of Los Angeles, which is the water supply area served by LADWP. Future water demand projected by LADWP in its 2015 UWMP is cumulative in nature and takes into account long-term demographic projections for population, housing, and employment within the City of Los Angeles. LADWP's 2015 UWMP does not identify specific projects, but bases the water demand forecasting on long-term trends in demographics, socioeconomics, conservation, weather, and non-revenue water consumption; consequently, the 2015 UWMP water demand forecasting includes LAX and LAX projects. As described in Section 4.9.1.3.1.1, there are several state Senate and Assembly bills pertaining to regional water supply planning and analysis, in particular SB 610, which require that the water demands of individual development projects be evaluated within a regional context so that cumulative water demands (i.e., the water demands of a proposed project along with the anticipated water demands of other existing and proposed development within the service area of the water purveyor) can be met by the future water supply.

As concluded in Section 4.9.1.5.1, Project-related water demand during construction and operation would not require or result in the relocation or construction of new or expanded water facilities. Therefore, proposed Project impacts on water facilities would be less than significant. However, as part of the proposed Project, potable water pipelines would be extended or upgraded to serve Terminal 9 and reclaimed water pipelines would be extended from planned stub-outs in the CTA to Concourse 0 and Terminal 9. As described in Section 4.9.1.5.1, construction of these pipelines would not cause significant environmental effects. As concluded in Section 4.9.1.5.2, sufficient water supplies would be available to supply the proposed Project and reasonably foreseeable future development during normal, dry, and multiple dry years. Therefore, proposed Project impacts on regional water supply would be less than significant.

The cumulative project that would result in the construction of new or expanded water facilities is the construction of potable and reclaimed water pipelines within and to the CTA, including the pipelines associated with the AWPF. Many of the segments of the planned reclaimed water pipelines would be construction in conjunction with ongoing construction projects at LAX; therefore, no new impacts would result from construction of these segments. With respect to new construction, as noted in Section 4.9.1.5.1, there are no sensitive resources within the CTA that would be adversely affected by construction of reclaimed water pipelines (e.g., cultural resources, biological resources, noise-sensitive land uses). Therefore, cumulative impacts from construction of reclaimed water pipelines associated with the proposed Project and construction of other planned potable and reclaimed water pipelines at LAX would be ***less than significant***.

The cumulative projects that would contribute to water demand in conjunction with the proposed Project are the LAX Northside Development; the LAX Landside Access Modernization Program; various terminal improvement projects including the Midfield Satellite Concourse (MSC) South Project, Terminal 2/Terminal 3 Modernization Project, Terminal 4 Modernization Project, and Terminal 6 Renovation; the Airport Metro Connector 96th Street Transit Station; and ancillary airport facilities such as the LAX Airfield Bus Yard Facility. The Board of Water and Power Commissioners adopted a WSA for the LAX Landside Access Modernization Program which concluded that LADWP has sufficient water supply to meet the project demands of that project.[29] Environmental documents prepared for several of the other projects, including the LAX Northside Development, MSC South Project, Terminal 2/Terminal 3 Improvement Project, and the Airport Metro Connector 96th Street Transit Station, determined that project-related water demands were accounted for in the UWMP that was current at the time the documents were prepared.[30,31,32,33] No water supply impacts were identified for the remaining cumulative projects.

LADWP's WSA for the proposed Project evaluates the water demand of the proposed Project cumulatively with other known projects in LADWP's service area, using long-term demographic projections for population, housing, and employment from the 2015 UWMP. Additionally, the water supply planning requirements of SB 610 provide an additional means of confirming that the cumulative future water demands of individual development projects can be met by planned water supplies. Therefore, the evaluation conducted by LADWP for the proposed Project WSA, along with the applicability of SB 610 to other development projects proposed within LADWP's service area, are inherently cumulative in nature. In the approved WSA for the proposed Project (provided in **Appendix H**), LADWP concludes that the proposed Project's water demand can be accommodated based on the water demand projections in the 2015 UWMP when considered cumulatively with other projects within the LADWP service area. Moreover, SB 610 applies to other development projects proposed within LADWP's service area that may not be accounted for in the 2015 UWMP. Based on the findings of the WSA that the proposed Project's water demand can be accommodated, in conjunction with similar analyses for projects not accounted for in the 2015 UWMP, there will be an adequate regional water supply. Therefore, cumulative impacts related to water demand from the proposed Project would be ***less than significant***.

4.9.1.7 Summary of Impact Determinations

Table 4.9.1-2 summarizes the impact determinations of the proposed Project related to water supply, as described above in Sections 4.9.1.5 and 4.9.1.6. Impact determinations are based on the significance criteria presented in Section 4.9.1.4, and the information and data sources cited throughout Section 4.9.1.

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29 City of Los Angeles, Los Angeles World Airports, *Final Environmental Impact Report for Los Angeles International Airport (LAX) Landside Access Modernization Program*, (SCH 2015021014), Section 4.13 – Utilities and Service Systems, February 2017. Available: https://www.lawa.org/en/connectinglax/automated-people-mover/documents.

30 City of Los Angeles, Los Angeles World Airports, *Final Environmental Impact Report for Los Angeles International Airport (LAX) Northside Plan Update*, (SCH 2012041003), Section 4.15 – Utilities and Services, December 2014. Available: https://www.lawa.org/en/lawa-our-lax/environmental-documents/documents-certified/lax-northside-plan-update/environmental-documents.

31 City of Los Angeles, Los Angeles World Airports, *Final Environmental Impact Report for Los Angeles International Airport (LAX) Midfield Satellite Concourse*, (SCH 2013021020), Appendix A.1 – Initial Study and Distribution List, Section XVII. Utilities and Service Systems, June 2014. Available: https://www.lawa.org/en/lawa-msc-north/project-documents.

32 City of Los Angeles, Los Angeles World Airports, *Final Environmental Impact Report for Los Angeles International Airport (LAX) Terminals 2 and 3 Modernization Project*, (SCH 2016081034), Section 6.5.3.4 – Water Supply and Existing Utility Infrastructure in the Project Area, June 2017. Available: https://www.lawa.org/en/lawa-our-lax/environmental-documents/documents-certified/lax-terminal-2-and-3-modernization.

33 Los Angeles County Metropolitan Transportation Authority, *Airport Metro Connector 96th Street Transit Station Draft Environmental Impact Report*, (SCH 2015021009), Chapter 4 – Other CEQA Considerations, June 2016. Available: https://media.metro.net/projects_studies/crenshaw/images/AMC_96th_St_Station_Draft_EIR_2016-6.pdf.

Table 4.9.1-2
Summary of Impacts and Mitigation Measures Associated with the Proposed Project Related to Water Supply

Environmental Impacts	Impact Determination	Mitigation Measures	Level of Significance After Mitigation
Impact 4.9.1-1: The proposed Project would not require or result in the relocation or construction of new or expanded water facilities, the construction or relocation of which could cause significant environmental effects. This would be a ***less than significant impact*** for construction and operations.	Construction: Less than Significant Operations: Less than Significant	No mitigation is required	Construction: Less than Significant Operations: Less than Significant
Impact 4.9.1-2: The proposed Project would have sufficient water supplies available to serve the Project and reasonably foreseeable future development during normal, dry, and multiple dry years. This would be a ***less than significant impact*** for construction and operations.	Construction: Less than Significant Operations: Less than Significant	No mitigation is required	Construction: Less than Significant Operations: Less than Significant

4.9.2 Wastewater Generation

4.9.2.1 Introduction

This section assesses the proposed Project's potential wastewater impacts from Concourse 0 and Terminal 9. The demand for wastewater treatment is evaluated, as is the need for new wastewater conveyance pipelines. The proposed airfield and roadway improvements would not generate wastewater.

4.9.2.2 Methodology

This analysis compares the proposed Project's estimated wastewater generation to existing and future wastewater treatment conditions and capacity. The proposed Project would include new concourse and terminal improvements (Concourse 0 and Terminal 9). These Project components would generate wastewater that would require treatment. The proposed airfield and roadway improvements would not accommodate passengers or employees and, therefore, would not generate wastewater.

As discussed in Section 4.9.1, *Water Supply,* the Los Angeles Department of Water and Power (LADWP) estimated Project-related water demand as part of a Water Supply Assessment (WSA) prepared for the proposed Project (provided in **Appendix H**). The WSA calculated total Project-related net water demand associated with Concourse 0 and Terminal 9 at Project build-out (i.e., 2028), using LADWP Bureau of Sanitation sewer generation rates, among other sources. For purposes of this analysis, all water consumption associated with Concourse 0 and Terminal 9 was assumed to be discharged as sanitary wastewater. Therefore, the Project-related water demand associated with Concourse 0 and Terminal 9 calculated for the WSA also represents Project-related wastewater generation.

To determine whether the increase in wastewater generation associated with the proposed Project would be significant, defined in terms of whether the relocation or construction of new or expanded wastewater treatment facilities would be needed, the estimated wastewater generation volume was compared to the existing and planned wastewater treatment capacity of the Hyperion Water Reclamation Plant (HWRP), which treats sanitary wastewater generated by activities at LAX. Further, a qualitative assessment of wastewater conveyance pipelines required by the proposed Project is provided.

4.9.2.3 Existing Conditions

4.9.2.3.1 Regulatory Setting

4.9.2.3.1.1 State

State General Waste Discharge Requirements

The Statewide General Waste Discharge Requirements (WDRs) for publicly-owned sanitary sewer systems require the City to develop and implement a Sewer System Management Plan (SSMP). The City's SSMP, last updated in January 2019, provides a plan and schedule to properly manage, operate, and maintain all parts of the wastewater collection system in order to reduce and prevent sanitary sewer overflows, and to mitigate any overflows that do occur.[1]

[1] City of Los Angeles, LA Sanitation & Environment, *Sewer System Management Plan Version 3.0,* January 25, 2019. Available: https://www.lacitysan.org/cs/groups/public/documents/document/y250/mdm1/~edisp/cnt035427.pdf.

Green Buildings Standards

The 2019 California Green Building Standards Code (CALGreen) is discussed above in Section 4.9.1, *Water Supply*. CALGreen contains specific requirements for plumbing fixtures directed at water conservation. These requirements also reduce wastewater flows.

4.9.2.3.1.2 Local

One Water LA

As discussed in Section 4.9.1, *Water Supply*, the City prepared the One Water LA 2040 Plan in 2018. The Plan includes a wastewater facilities plan that addresses the City's future wastewater treatment and infrastructure needs through 2040.[2]

L.A.'s Green New Deal

As discussed in Section 4.9.1, *Water Supply*, L.A.'s Green New Deal[3] contains strategies for the City to increase sustainability and address current and future climate change impact. Regarding wastewater, the Green New Deal includes a target of recycling 100 percent of all wastewater for beneficial reuse by 2035.

LAWA Sustainability Plans and Guidelines

As discussed in Section 4.9.1, *Water Supply,* LAWA's Design and Construction Handbook (DCH) includes technical standards for water efficiency and water conservation for new construction and renovation projects.[4] To comply with these standards, projects are required to use water conserving devices and fixtures that minimize water consumption to an aggregate level that is 25 percent below code requirements; this requirement will also reduce wastewater generation.

As discussed in Section 4.9.1, *Water Supply,* LAWA's *Sustainability Action Plan (SAP)*[5] identifies a goal to increase reclaimed water use by 35 percent and decrease potable water use by 30 percent by 2035. Reductions in potable water use due to use of more efficient fixtures and devices will also result in reduced wastewater generation.

4.9.2.3.2 Environmental Setting

Wastewater treatment for the Project site and the surrounding area is provided by the Los Angeles Department of Public Works, Bureau of Sanitation, known as LA Sanitation & Environment (LASAN). The LASAN system is the largest wastewater collection system in the United States. It serves a population of more than 4 million within a 600-square-mile service area that includes the City of Los Angeles and 29 contracting cities and agencies. The City's more than 6,700 miles of public sewers convey up to 360 million gallons per day (mgd) of flow from residences and businesses to the City's four water reclamation plants. Together, the four water reclamation plants have a combined capacity of 580 mgd.[6,7]

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2 City of Los Angeles, LA Sanitation & Environment and Department of Water and Power, *One Water LA 2040 Plan – Volume 1 Summary Report, Final Draft,* prepared by Carollo, et. al., April 2018. Available: https://www.lacitysan.org/cs/groups/sg_owla/documents/document/y250/mdi2/~edisp/cnt026188.pdf.

3 City of Los Angeles, Office of the Mayor, Mayor Eric Garcetti, *L.A.'s Green New Deal: Sustainable City pLAn*, 2019. Available: http://plan.lamayor.org/sites/default/files/pLAn_2019_final.pdf.

4 City of Los Angeles, Los Angeles World Airports, *2020 Design and Construction Handbook (DCH), Version 1.0,* June 30, 2020. Available: https://www.lawa.org/en/lawa-businesses/lawa-documents-and-guidelines/lawa-design-and-construction-handbook.

5 City of Los Angeles, Los Angeles World Airports, *LAWA Sustainability Action Plan*, 2019. Available: https://cloud1lawa.app.box.com/s/63i2teszgnld5aws68xbou6yc0inl5rp.

6 City of Los Angeles, LA Sanitation & Environment, *Water Reclamation Plants webpage*. Available: https://www.lacitysan.org/san/faces/home/portal/s-lsh-wwd/s-lsh-wwd-cw/s-lsh-wwd-cw-p?_adf.ctrl-state=8diofq9yg_1737&_afrLoop=11690760693640740#!, accessed June 2, 2020.

7 City of Los Angeles, LA Sanitation & Environment and Department of Water and Power, *Advanced Water Purification Facility Pilot Study Report*, prepared by Brown and Caldwell and Trussell Technologies, July 2018. Available: https://www.lacitysan.org/san/sandocview?docname=cnt027939.

Wastewater within the Project area is collected by local sewer lines that generally run within rights-of-way and connect to larger interceptor and outfall sewers that flow to the HWRP, located to the south of LAX. There are several large diameter sewers (North Central Outfall Sewer, North Outfall Relief Sewer, and the Central Outfall Sewer) that cross beneath LAX and convey flows from LAX and other parts of the City to the HWRP. The HWRP provides full secondary treatment for all influent, with a maximum daily flow of 450 mgd. A portion of secondary treated effluent from HWRP (approximately 40 mgd) is conveyed to the Edward C. Little Water Recycling Facility (ECLWRF) operated by the West Basin Municipal Water District (WBMWD), where it is further treated and recycled. Effluent flow from HWRP to ECLWRF will increase to 70 mgd in the future (see Section 4.9.1.3.2). Some of the recycled water produced at ECLWRF supplies LAX. In 2016, flows to HWRP averaged 250 mgd; in 2030, flows are projected to be 275 mgd.[8]

In addition to the HWRP, the City of Los Angeles operates the Donald C. Tillman Water Reclamation Plant (DCTWRP) in the San Fernando Valley. The DCTWRP has a capacity of 80 mgd. In 2016, flows to DCTWRP averaged 47 mgd; in 2030, flows are projected to be 51 mgd.[9]

HWRP and DCTWRP both have a septage receiving facility where vendors that service portable toilets used by the construction industry can dispose of collected waste.

4.9.2.4 Thresholds of Significance

A significant impact related to wastewater generation would occur if the proposed Project would:

Threshold 4.9.2-1 Require or result in the relocation or construction of new or expanded wastewater treatment facilities, the construction or relocation of which could cause significant environmental effects.

Threshold 4.9.2-2 Exceed wastewater treatment capacity due to Project-related wastewater treatment demand.

These thresholds are derived from Appendix G of the State CEQA Guidelines.

4.9.2.5 Project Impacts

4.9.2.5.1 Impact 4.9.2-1

Summary Conclusion for Impact 4.9.2-1: The proposed Project would not require or result in the relocation or construction of new or expanded wastewater treatment facilities, the construction or relocation of which could cause significant environmental effects. This would be a *less than significant impact* for construction and operations.

4.9.2.5.1.1 Construction

Construction of the proposed Project would generate small quantities of wastewater associated with construction workers. Typically, temporary or portable restroom facilities are placed at each construction location. Wastewater from the portable restrooms is hauled to the HWRP or DCTWRP septage facility for disposal to the wastewater treatment system.[10] As discussed above, wastewater flows to the HWRP are

[8] City of Los Angeles, LA Sanitation & Environment and Department of Water and Power, *One Water LA 2040 Plan – Volume 2 Wastewater Facilities Plan*, *Final Draft,* prepared by Stantec in collaboration with Carollo, April 2018. Available: https://www.lacitysan.org/cs/groups/sg_owla/documents/document/y250/mdi2/~edisp/cnt026205.pdf.

[9] City of Los Angeles, LA Sanitation & Environment and Department of Water and Power, *One Water LA 2040 Plan – Volume 2 Wastewater Facilities Plan, Final Draft,* prepared by Stantec in collaboration with Carollo, April 2018. Available: https://www.lacitysan.org/cs/groups/sg_owla/documents/document/y250/mdi2/~edisp/cnt026205.pdf.

[10] The City operates septage facilities at HWRP and DCTWRP where providers of temporary restroom facilities and septic tank pumping operators are required to dispose of the associated wastewater.

currently about 250 mgd, and flows to DCTWRP are currently approximately 47 mgd, both well below their respective capacities of 450 mgd and 80 mgd. Further, by 2030, wastewater flows to HWRP and DCTWRP are projected to be 275 mgd and 51 mgd, respectively, both well below the respective plant capacities. There is adequate capacity at both HWRP and DCTWRP to accommodate wastewater generated by construction workers associated with the proposed Project.

The proposed Project is located in an urbanized portion of the City of Los Angeles that is well served by wastewater distribution infrastructure. Existing sewer mains, trunk lines (i.e., outfall sewers), and service lines provide service throughout the Project area. Wastewater from Terminal 9 would be conveyed via new sewer pipelines to the nearest collector sewer for ultimate conveyance, via an existing main sewer outfall, to HWRP for processing. The main sewer outfalls that would receive wastewater from the proposed Project have sufficient capacity. However, some of the local collector pipelines that would convey wastewater from Concourse 0 to the main outfall do not have capacity for projected Concourse 0 wastewater flows. There are two options that would result in adequate conveyance capacity. Under one option, a new approximately 8-inch pipeline, 675 feet in length, would be constructed to connect Concourse 0 to the main outfall without using the nearby collector pipelines that do not have capacity. Alternatively, as part of the proposed Project, the nearby local collector pipelines between Concourse 0 and the outfall sewer would be up-gauged from 8-inch pipelines to approximately 15-inch pipelines to serve the proposed Project. Under either option, the pipelines would be located in a portion of the airport that is currently developed and does not contain any sensitive resources (e.g., cultural resources, biological resources, nearby sensitive land uses). Moreover, the area where the new or up-gauged pipeline(s) would be installed would already be under construction as part of the proposed Project. Therefore, construction of either option would occur as part of the overall construction of the proposed Project and would not result in any new environmental impacts.

For the reasons discussed above, the proposed Project would not require or result in the relocation or construction of new or expanded wastewater treatment facilities, the construction or relocation of which could cause significant environmental effects. Impacts to the City's wastewater treatment system from Project construction would be ***less than significant***.

4.9.2.5.1.2 Operations

The proposed Project would generate wastewater from operation of Concourse 0 and Terminal 9. As discussed in Section 4.9.1, *Water Supply,* LADWP prepared a Water Supply Assessment (WSA) for the proposed Project, which estimated the Project's water demand. Indoor water demand was calculated using LASAN sewer generation rates. For purposes of this analysis, wastewater generation is assumed to equal water demand.

Concourse 0 and Terminal 9 are projected to generate approximately 0.05 mgd of wastewater without accounting for additional water conservation commitments made by LAWA.[11] When taking into account facilities that would be removed with Project implementation, these Project components would generate approximately 0.03 mgd. Wastewater from Terminal 9 would be conveyed via new sewer pipelines to the nearest collector sewer for ultimate conveyance, via existing outfall sewers, to HWRP for processing. As discussed in Section 4.9.2.5.1.1, Concourse 0 would require new or upgraded local sewer pipelines in order to meet the capacity needs. As described above, provision of these new or upgraded pipelines would not result in any new environmental impacts.

[11] This wastewater generation estimate is conservative because it does not include reductions due to additional water conservation measures that LAWA has committed to, as quantified in Table 4.9.1-1. The additional water conservation measures would apply to indoor water use, such as low-flow fixtures and appliances, as well as landscaping. Only the water conservation measures associated with indoor water use would alter wastewater flows. As the WSA does not calculate the water savings associated with individual measures, the reductions cannot be subtracted from the estimate of indoor wastewater generation.

As discussed in Section 4.9.2.3.2, flows at HWRP are currently approximately 250 mgd, and are projected to be approximately 275 mgd by 2030, both well below HWRP's capacity (450 mgd). In 2030, excess capacity at HWRP is expected to be approximately 175 mgd. The proposed Project would generate approximately 0.03 mgd of wastewater in 2028, which would not cause HWRP to exceed its treatment capacity. Therefore, the proposed Project would not require or result in the relocation or construction of new or expanded wastewater treatment facilities, the construction or relocation of which could cause significant environmental effects. Impacts to the City's wastewater treatment system from Project operation would be ***less than significant***.

4.9.2.5.1.3 Mitigation Measures

Because construction and operation of the proposed Project would result in a ***less than significant*** impact to the wastewater treatment and conveyance system, no mitigation is required.

4.9.2.5.1.4 Significance of Impact After Mitigation

As indicated above, no mitigation is required to address wastewater generation. The proposed Project would result in a ***less than significant*** impact for construction and operations.

4.9.2.5.2 Impact 4.9.2-2

Summary Conclusion for Impact 4.9.2-2: The proposed Project would not exceed wastewater treatment capacity due to Project-related wastewater treatment demand. There would be *no impact* for construction and operations.

4.9.2.5.2.1 Construction

As discussed in Section 4.9.2.5.1.1, construction workers would generate small quantities of wastewater. As discussed above, there is adequate capacity at both HWRP and DCTWRP to accommodate this wastewater. As such, the construction-related wastewater generation by the proposed Project would not exceed wastewater treatment capacity and there would be ***no impacts*** related to wastewater treatment demand.

4.9.2.5.2.2 Operations

As discussed in Section 4.9.2.5.1.2 above, the proposed Project would generate wastewater from operation of Concourse 0 and Terminal 9. As discussed above, the proposed Project would generate approximately 0.03 mgd of wastewater in 2028, which would not cause HWRP to exceed its treatment capacity. Therefore, the operations-related wastewater generation from the proposed Project would not exceed wastewater treatment capacity and there would be ***no impacts*** related to wastewater treatment demand.

4.9.2.5.2.3 Mitigation Measures

Because construction and operation of the proposed Project would result in ***no impact*** related to wastewater treatment capacity, no mitigation is required for construction or operations.

4.9.2.5.2.4 Significance of Impact After Mitigation

As indicated above, no mitigation is required to address wastewater treatment capacity. The proposed Project would result in ***no impact*** for construction and operations.

4.9.2.6 Cumulative Impacts

The geographical scope of the cumulative impacts analysis for the City's wastewater system is the Hyperion Service Area,[12] a primary drainage area covering approximately 515 square miles, which serves the City of Los Angeles and the 29 agencies that contract with the City to convey and treat their wastewater.

The City's projection of future wastewater generation within the Hyperion Service Area, including at HWRP and DCTWRP, is cumulative in nature and takes into account projected population increases, as well as future commercial and industrial activity within the City and contract agencies. The projections are based in part on LADWP's 2015 Urban Water Management Plan (UWMP) in conjunction with census data prepared by the Southern California Association of Governments (SCAG), and account for projected economic activity, weather, and water conservation activities.[13] As discussed in Section 4.9.2.3.2, the City projects that HWRP and DCTWRP will be operating substantially below their rated capacities in 2030.

As concluded in Section 4.9.2.5.1, wastewater generated by the proposed Project during construction and operation could be accommodated by existing regional wastewater treatment plants and would not require or result in the relocation or construction of new or expanded wastewater treatment facilities. Therefore, proposed Project impacts on wastewater facilities would be less than significant.

The cumulative projects at or adjacent to LAX that, in conjunction with the proposed Project, would contribute to cumulative wastewater generation are the LAX Northside Development; the LAX Landside Access Modernization Program; various terminal improvement projects including the Midfield Satellite Concourse (MSC) South Project, Terminal 2/Terminal 3 Modernization Project, Terminal 4 Modernization Project, and Terminal 6 Renovation; ancillary facilities such as the LAX Airfield Bus Yard Facility; and the Airport Metro Connector 96th Street Transit Station.

Wastewater generation was calculated in the environmental documents prepared for several of these projects. Specifically, the LAX Northside Development would generate approximately 270,000 gallons per day (gpd),[14] the LAX Landside Access Modernization Program would generate approximately 122,000 gpd,[15] and the Airport Metro Connector 96th Street Transit Station would generate approximately 33,000 gpd.[16] Combined, these projects would generate approximately 425,000 gpd or 0.425 mgd of wastewater. Wastewater was not calculated for the terminal modernization projects or the bus yard facility. Based on the size of the MSC South Project as compared to the proposed Project (145,000 square feet versus 2.75 million square feet), the MSC South Project would generate substantially less wastewater than the proposed Project. The remaining projects represent relocation or modification of existing facilities that would not increase wastewater generation, or would result in very minor increases. With excess available capacity at HWRP projected to be approximately 175 mgd in 2030, the cumulative projects would not result in wastewater flows to HWRP that exceed, or even approach, HWRP's

[12] The Hyperion Service Area is geographic area that is served by the City's HWRP, DCTWRP, and Los Angeles-Glendale Water Reclamation Plant.

[13] City of Los Angeles, LA Sanitation & Environment and Department of Water and Power, *One Water LA 2040 Plan – Volume 2 Wastewater Facilities Plan, Final Draft,* prepared by Stantec in collaboration with Carollo, April 2018. Available: https://www.lacitysan.org/cs/groups/sg_owla/documents/document/y250/mdi2/~edisp/cnt026205.pdf.

[14] City of Los Angeles, Los Angeles World Airports, *Final Environmental Impact Report for Los Angeles International Airport (LAX) Northside Plan Update*, (SCH 2012041003), Section 4.15 – Utilities and Services, December 2014. Available: https://www.lawa.org/en/lawa-our-lax/environmental-documents/documents-certified/lax-northside-plan-update/environmental-documents.

[15] City of Los Angeles, Los Angeles World Airports, *Final Environmental Impact Report for Los Angeles International Airport (LAX) Landside Access Modernization Program*, (SCH 2015021014), Section 4.13 – Utilities and Service Systems, February 2017. Available: https://www.lawa.org/en/connectinglax/automated-people-mover/documents.

[16] Los Angeles County Metropolitan Transportation Authority, *Airport Metro Connector 96th Street Transit Station Draft Environmental Impact Report*, (SCH 2015021009), Section 3.2 – Greenhouse Gas Emissions, June 2016. Available: https://media.metro.net/projects_studies/crenshaw/images/AMC_96th_St_Station_Draft_EIR_2016-6.pdf.

wastewater treatment capacity. Therefore, the wastewater flows associated with the cumulative development projects would not require or result in the relocation or construction of new or expanded wastewater treatment facilities.

As noted in Section 4.9.2.3.2, total wastewater flows at HWRP in 2030, which take into account future growth and new development projects in the Hyperion Service Area, are projected to be approximately 275 mgd, resulting in excess capacity of approximately 175 mgd. Together, wastewater from the proposed Project (approximately 0.03 mgd) and the cumulative projects at or adjacent to LAX (approximately 0.425 mgd), would generate approximately 0.455 mgd of wastewater, which would not cause HWRP to exceed its treatment capacity. Therefore, cumulative projects would not require or result in the relocation or construction of new or expanded wastewater treatment facilities, and cumulative impacts on wastewater treatment facilities would be ***less than significant***.

4.9.2.7 Summary of Impact Determinations

Table 4.9.2-1 summarizes the impact determinations of the proposed Project related to wastewater generation, as described above in Sections 4.9.2.5 and 4.9.2.6. Impacts determinations are based on the significance criteria presented in Section 4.9.2.4, and the information and data sources cited throughout Section 4.9.2.

Table 4.9.2-1
Summary of Impacts and Mitigation Measures Associated with the Proposed Project Related to Wastewater Generation

Environmental Impacts	Impact Determination	Mitigation Measures	Level of Significance After Mitigation
Impact 4.9.2-1: The proposed Project would not require or result in the relocation or construction of new or expanded wastewater treatment facilities, the construction or relocation of which could cause significant environmental effects. This would be a ***less than significant impact*** for construction and operations.	Construction: Less than Significant Operations: Less than Significant	No mitigation is required	Construction: Less than Significant Operations: Less than Significant
Impact 4.9.2-2: The proposed Project would not exceed wastewater treatment capacity due to Project-related wastewater treatment demand. There would be ***no impact*** for construction and operations.	Construction: No Impact Operations: No Impact	No mitigation is required	Construction: No Impact Operations: No Impact

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5. ALTERNATIVES

5.1 Introduction

Section 15126.6 of the State California Environmental Quality Act (CEQA) Guidelines requires that an Environmental Impact Report (EIR) include a discussion of a reasonable range of project alternatives that would "feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives." Within that context, this chapter discusses alternatives to the proposed Project.

Key provisions of the State CEQA Guidelines on alternatives (Section 15126.6(a) through (f)) are excerpted below to explain the foundation and legal requirements for the alternatives analysis in the EIR.

- "An EIR need not consider every conceivable alternative to a project. Rather it must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation. An EIR is not required to consider alternatives which are infeasible." (15126.6(a))
- "…the discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly." (15126.6(b))
- "The EIR should also identify any alternatives that were considered by the lead agency but were rejected as infeasible… and briefly explain the reasons underlying the lead agency's determination… Among the factors that may be used to eliminate alternatives from detailed consideration in the EIR are (i) failure to meet most of the basic project objectives, (ii) infeasibility, or (iii) inability to avoid significant environmental impacts." (15126.6(c))
- "The EIR shall include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project. A matrix displaying the major characteristics and significant environmental effects of each alternative may be used to summarize the comparison. If an alternative would cause one or more significant effects in addition to those that would be caused by the project as proposed, the significant effects of the alternative shall be discussed, but in less detail than the significant effects of the project as proposed." (15126.6(d))
- "The specific alternative of 'no project' shall also be evaluated along with its impact." (15126.6(e)(1)) "The 'no project' analysis shall discuss the existing conditions at the time the notice of preparation is published, or if no notice of preparation is published, at the time environmental analysis is commenced, as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services. If the environmentally superior alternative is the 'no project' alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives." (15126.6(e)(2))
- "The range of alternatives required in an EIR is governed by a 'rule of reason' that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project. Of those alternatives, the EIR need examine in detail only the ones that the lead agency determines could feasibly attain most of the basic objectives of the project. The range of feasible alternatives shall be selected and discussed in a manner to foster meaningful public participation and informed decision making." (15126.6(f))

- "Among the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries,…and whether the proponent can reasonably acquire, control or otherwise have access to the alternative site (or the site is already owned by the proponent)." (15126.6(f)(1))
- For alternative locations, "[o]nly locations that would avoid or substantially lessen any of the significant effects of the project need be considered for inclusion in the EIR." (15126.6(f)(2)(A))
- "If the lead agency concludes that no feasible alternative locations exist, it must disclose the reasons for this conclusion, and should include the reasons in the EIR. For example, in some cases there may be no feasible alternative locations for a geothermal plant or mining project which must be in close proximity to natural resources at a given location." (15126.6(f)(2)(B))
- "An EIR need not consider an alternative whose effect cannot be reasonably ascertained and whose implementation is remote and speculative." (15126.6(f)(3))

The following sections discuss the significant impacts of the proposed Project as identified in Chapter 4, *Environmental Impact Analysis*, the objectives of the proposed Project, alternatives considered but rejected, alternatives carried forward for further consideration in this EIR, as well as the environmental impacts of alternatives carried forward, including discussion as to whether such alternatives would avoid or substantially lessen any of the significant environmental impacts associated with the proposed Project. Also included in this chapter is identification of the environmentally superior alternative.

5.2 Significant Impacts of the Proposed Project

In accordance with Section 15126.6(b) of the State CEQA Guidelines, the alternatives in this chapter have been selected to evaluate means for avoiding or substantially reducing the significant impacts of the proposed LAX Airfield and Terminal Modernization Project identified in Chapter 4 of this EIR. **Table 5-1** presents a summary matrix of findings for each of the resources analyzed in this EIR for the proposed Project. A summary of impacts for each significantly impacted resource category is presented below.

Table 5-1
Summary of Impacts - Proposed Project

Resource Category[1]	Proposed Project (Before Mitigation)	Mitigation Proposed	Proposed Project (After Mitigation)
Air Quality and Human Health Risk			
Air Quality			
Emissions (Construction)	Significant (NO_X) Significant (CO, VOC, SO_X; short-term – approx. 4.5 months)[2]	Yes	Significant and Unavoidable (NO_X) Significant and Unavoidable (CO, VOC, SO_X; short-term – approx. 4.5 months)[2]
Emissions (Operations)	Significant (NO_x, SO_x, PM_{10}, $PM_{2.5}$)	Yes	Significant and Unavoidable (NO_x, SO_x, PM_{10}, $PM_{2.5}$)
Concentrations (Construction)	Less than Significant	N/A	Less than Significant
Concentrations (Operations)	Significant (PM_{10})	Yes	Significant and Unavoidable (PM_{10})
Human Health Risk			
Cancer Risk	Less than Significant	N/A[3]	Less than Significant
Cancer Burden	Less than Significant	N/A[3]	Less than Significant

Table 5-1
Summary of Impacts - Proposed Project

Resource Category[1]	Proposed Project (Before Mitigation)	Mitigation Proposed	Proposed Project (After Mitigation)
Incremental Chronic Hazard	Less than Significant	N/A[3]	Less than Significant
Incremental Acute Hazard:	Less than Significant	N/A[3]	Less than Significant
Exceeds Permissible Exposure Limits	Less than Significant	N/A[3]	Less than Significant
Cultural Resources (Historical Resources)			
Substantial Adverse Change in Significance of Historical Resource	Less than Significant	N/A	Less than Significant
Energy			
Wasteful/Inefficient Consumption	Less than Significant	N/A[4]	Less than Significant
Conflict with/Obstruct Energy Efficiency Plans	No Impact	N/A[4]	No Impact
Greenhouse Gas Emissions			
GHG Generation Impact on Environment	Significant	Yes	Significant and Unavoidable
Conflict with GHG Reduction Plans/Policies/Regulations	Significant	Yes	Significant and Unavoidable
Hazardous Materials			
Unauthorized Release (Construction)	Less than Significant	N/A	Less than Significant
Unauthorized Release (Operations)	No Impact	N/A	No Impact
Hazard to Public/Environment (Construction)	Less than Significant	N/A	Less than Significant
Hazard to Public/Environment (Operations)	No Impact	N/A	No Impact
Land Use and Planning			
Conflict with Land Use Plans/Policies/Regulations	Less than Significant	N/A	Less than Significant
Noise			
Aircraft Noise			
Increase noise levels at noise-sensitive uses to 65 CNEL or above (Construction)	Significant (short-term – approx. 4.5 months)[2]	No mitigation feasible	Significant and Unavoidable (short-term – approx. 4.5 months)[2]
Increase noise levels at noise-sensitive uses to 65 CNEL or above (Operations)	Significant	Yes	Significant and Unavoidable
Increase by 1.5 dBA or more (Construction)	Significant (short-term – approx. 4.5 months)[2]	No mitigation feasible	Significant and Unavoidable (short-term – approx. 4.5 months)[2]
Increase by 1.5 dBA or more (Operations)	Less than Significant	N/A	Less than Significant
Classroom Learning Disruption	Less than Significant	N/A	Less than Significant
Roadway Traffic Noise			
Operational Roadway Traffic Noise	Less than Significant	N/A	Less than Significant
Construction Traffic and Equipment Noise and Vibration			
Construction Traffic Noise	Less than Significant	N/A	Less than Significant
Construction Equipment Noise	Significant	Yes	Less than Significant
Construction Equipment Vibration	Less than Significant	N/A	Less than Significant

Table 5-1
Summary of Impacts - Proposed Project

Resource Category[1]	Proposed Project (Before Mitigation)	Mitigation Proposed	Proposed Project (After Mitigation)
Transportation			
Conflict with Transportation Programs/Plans/Ordinances/Policies	Less than Significant	N/A	Less than Significant
VMT per Employee	Significant	Yes	Less than Significant
Daily Passenger VMT	Significant	Yes	Significant and Unavoidable
Induce Additional VMT	Significant	No mitigation feasible	Significant and Unavoidable
Increase Hazards/Incompatible Use	Less than Significant	N/A	Less than Significant
Utilities			
Water Supply			
Relocation/New Facilities Impacts	Less than Significant	N/A	Less than Significant
Water Demand	Less than Significant	N/A	Less than Significant
Wastewater Generation			
Relocation/New Facilities Impacts	Less than Significant	N/A	Less than Significant
Exceed Wastewater Treatment Capacity	Less than Significant	N/A	Less than Significant

Source: CDM Smith, August 2020.

Notes:

1 Impacts represent both construction and operations, unless otherwise noted.

2 Short-term impacts would result from temporary runway closures during construction.

3 Although mitigation is not required, mitigation measures that are recommended to reduce air quality, greenhouse gas (GHG) emissions, and transportation impacts would also reduce human health risk impacts.

4 Although mitigation is not required mitigation measures that are recommended to reduce air quality, greenhouse gas emissions, and transportation impacts would also reduce energy consumption.

Key:
N/A = Not applicable

5.3 Project Objectives

As identified in the State CEQA Guidelines, the achievement of the project objectives was considered in determining potentially feasible alternatives that would avoid or substantially lessen any significant effects of the proposed LAX Airfield and Terminal Modernization Project.

The underlying purpose of the LAX Airfield and Terminal Modernization Project is to support the ongoing modernization of LAX, consistent with the progress that has been made over the past several years in enabling LAX to continue to be a world-class airport, providing excellent passenger service, supporting the economic growth and prosperity of the Los Angeles region, and working closely with the neighboring communities to reduce airport-related impacts. The proposed Project would support the ongoing modernization of LAX by enhancing the safety and efficiency of the airfield; providing a new concourse and terminal to improve the quality of the passenger experience and efficiency of passenger processing; and improving the roadway system to better route airport-related traffic off of, and away from, the public roads that serve the community - all of which would help LAX to prepare early for the continued aviation growth that is projected by LAWA, the Southern California Association of Governments (SCAG), and the Federal Aviation Administration (FAA) to occur at LAX over the next several decades. Additionally, the nature and timing of improvements included in the proposed Project are integral to Los Angeles' plans to

host the 2028 Olympic and Paralympic Games, with LAX serving as the main portal for athletes, dignitaries, and visitors from around the world.

The Project objectives for the LAX Airfield and Terminal Modernization Project that support the underlying purpose are:

- Airfield Improvements - Enhance the safety and operational management of the LAX airfield while working within the limits of the existing 4-runway system (i.e., do not add or relocate runways). Specifically, the proposed airfield improvements seek to:
  - Enhance safety of the north airfield complex
  - Reconfigure north airfield taxiway and runway exits and intersections to meet current FAA design standards
  - Maintain or enhance airfield operational management
  - Provide additional flexibility for management of aircraft movements on the airfield
- Terminal Improvements – Provide for new modern, spacious, and efficient terminal facilities that support the ability to accommodate the projected future growth in passenger levels at LAX and do so in a manner that offers high-quality passenger service and operational flexibility. Specifically, the proposed terminal improvements seek to:
  - Improve passenger experience, increase airlines' efficiency, and reduce busing activity on the airfield through the removal and replacement of most of the West Remote Gates and the elimination of the associated busing of passengers
  - Improve international and domestic passenger processing capabilities
  - Improve immigration and customs processes for international passengers arriving at LAX
  - Provide additional connections to the previously-approved Automated People Mover (APM) system currently under construction
  - Provide connections to adjacent terminals that will allow passengers to move between terminals without having to go back through security screening
- Roadway System Improvements – In conjunction with providing landside (vehicle) access to the proposed new Terminal 9, develop a comprehensive network of roadway system improvements that will help separate and remove airport-related traffic from the local roadway system. Specifically, the proposed roadway system improvements seek to:
  - Reduce airport traffic back-ups onto public streets and surrounding neighborhoods, including, but not limited to, existing airport-related traffic congestion on Sepulveda Boulevard, especially near the entrance to the tunnel
  - Integrate the proposed roadway system improvements, including landside access to Terminal 9, with the approved LAX Landside Access Modernization Program improvements
  - Simplify driver wayfinding, reduce decision points, and provide more distance for maneuvering
  - Reduce concentration of traffic and roadway facilities at and around the Century Boulevard/Sepulveda Boulevard/CTA interchange area
  - Support access to the Intermodal Transportation Facility (ITF) West that is linked with the APM system, which will encourage use of those facilities and reduce vehicle miles traveled (VMT)

- Develop an APM station to provide access to the future APM system for passengers and employees of the proposed Terminal 9, as well as other LAX passengers and employees (e.g., flight crews) that utilize hotel facilities nearby, which can help to reduce VMT

- Additional Objectives
  - Generate business development, employment opportunities and economic activity that draws from the local workforce and benefits the communities located around LAX and the City of Los Angeles
  - Maintain airport operations during construction
  - Implement airport improvements in a sustainable manner that considers the total cost of ownership, including financial, environmental, and social costs
  - Complete construction of the proposed Project prior to the 2028 Olympic and Paralympic Games to be held in Los Angeles

5.4 Alternatives

As described at the beginning of this chapter, the significant impacts associated with the proposed Project pertain to both construction activities and operations. Alternatives presented in this section include (1) alternatives that were initially considered but were screened-out from further consideration due to their infeasibility or inability to avoid or substantially reduce the significant impacts of the Project, and (2) alternatives that were carried forward for analysis. Also, as required by CEQA, the "No Project" Alternative is described in this section.

5.4.1 Alternatives Considered but Rejected

Per Section 15126.6(c) of the State CEQA Guidelines, this section describes preliminary alternatives that were considered but screened-out from detailed consideration in the Draft EIR.

A separate alternative focusing on the airfield improvements was not developed. During conceptual design, multiple airfield configurations were developed for taxiway and runway exit improvements in order to study options for meeting operational and safety requirements. The options included differences in separations, dimensions, and configurations. In terms of impacts, the different airfield improvement options would have minor differences based on the types of enabling projects required to realize the options; however, the relative environmental impact of each of the airfield options would be virtually indistinguishable. Any alternative involving reconfiguring the airfield would require temporary closure of a runway during construction and would thus generate temporary significant noise and air quality impacts associated with the shift in aircraft operations during this period. For these reasons, there are no alternative airfield configurations that would serve to avoid or reduce any of the proposed Project's significant environmental effects. One of the alternatives, Alternative 1, No Project, does not include any airfield improvements. This alternative would avoid the short-term significant air quality and aircraft noise impacts associated with temporary runway closures that would be required to implement the airfield improvements associated with the proposed Project. Alternative 1 is addressed in Section 5.4.2.1 below.

With regard to a landside (roadway) improvements alternative that would address the significant induced VMT impacts of the proposed Project, Section 5.4.2.1 below presents Alternative 1, the No Project Alternative, which does not include the proposed Project's roadway improvements, but instead includes the approved LAX Landside Access Modernization Program Phase 2 roadway improvements. As described in the impacts analysis below, Alternative 1, like the proposed Project, would result in induced VMT because it would take airport-related trips off of Sepulveda Boulevard that, in turn, would induce new or longer trips (i.e., VMT).

5.4.1.1 Alternative Locations

As noted above, if the lead agency concludes that no feasible alternative locations exist, it must disclose the reasons for this conclusion, and should include the reasons in the EIR.

The underlying purpose of the proposed Project is to support the ongoing modernization of LAX. An alternate location would not meet any of the proposed Project's purpose and objectives, and LAWA does not have the ability to reasonably acquire, control, or otherwise have access to any alternative site where the proposed Project's purpose and objectives would be able to be achieved. Without these improvements, ongoing modernization of LAX would not be fully realized and the purpose of the Project would not be met. Therefore, construction of the proposed Project at another location would not be feasible.

5.4.1.2 West Terminal Alternative

Under the West Terminal Alternative, a new passenger terminal complex would be constructed at the west end of the airport on Pershing Drive in lieu of constructing Concourse 0 and Terminal 9. The West Terminal Alternative would include the same airfield improvements as the proposed Project. Under this alternative, 12 of the existing 18 West Remote Gates would be eliminated by the westerly extension of Taxiway D, or otherwise decommissioned, leaving the remaining six gates in operation. Roadway improvements under the West Terminal Alternative would be constructed on the west side of the airport around Westchester Parkway, Imperial Highway, Pershing Drive, and World Way West. Because the West Terminal Alternative would re-distribute a portion of passenger traffic from the CTA to the west side of the airport, and because it would not include Terminal 9, this alternative would not require the roadway improvements in or around the CTA that are proposed as part of the Project.

The West Terminal Alternative would provide a new passenger terminal and 12 passenger gates in a three- to four-level structure consisting of 2 million square feet of space. A conceptual layout of the new terminal and gates is provided in **Figure 5-1**. Airside improvements associated with this alternative would include construction of dual north/south Airplane Design Group (ADG) VI taxiways west of the West Terminal. It would also include construction of aircraft apron areas and service roads that would run north/south along the terminal and connect to east/west vehicle service roads. Access to the West Terminal would be provided by Westchester Parkway from the north and Imperial Highway from the south to Pershing Drive and then to World Way West. The new terminal would include multiple curb-front lanes at up to three levels that could be segregated by northbound and southbound traffic. The upper curb would serve enplaning passengers and would consist of multiple lanes, including both multiple curbing lanes (allowing double parking) and through lanes. The center level would include multiple-lanes and accommodate only commercial vehicles (both enplaning and deplaning passengers). The lower level would include multiple-lanes and accommodate deplaning passengers. Close-in parking for the West Terminal would be accommodated by a multiple-level parking facility immediately west of the terminal building (not shown on the figure).

This alternative would accommodate international operations at LAX and the accompanying large widebody fleet size and passenger volume. New terminal development space would be reclaimed from the existing airline maintenance/support areas in the west side of the airport along World Way West, which currently support a Qantas hangar and the recently-completed Delta Air Lines hangar and ground support equipment (GSE) maintenance building.[1]

[1] The Delta Air Lines hangar and GSE maintenance building are not shown on the aerial photo in Figure 5-1.



0 1,500 3,000 Feet
Scale

Sources: Los Angeles World Airports, June 2017 (aerial photography); Ricondo & Associates, Inc, March 2020
Prepared by: CDM Smith, October 2020

Legend

- West Terminal
- Concourse

Note:
1. Delta Air Lines maintenance hangar and GSE facility, which were completed in 2019/2020, are not shown on the aerial photograph.

LAX Airfield and Terminal Modernization Project	West Terminal Alternative	Figure 5-1

The West Terminal Alternative would not include construction of the landside improvements associated with the proposed Project. In addition, the West Terminal would be smaller than the combined total square footage of Concourse 0 and Terminal 9 and would provide fewer new passenger gates than the proposed Project (i.e., 12 new gates at the West Terminal compared to 18 to 27 new passenger gates under the proposed Project). All 12 passenger gates would be available to serve as replacement passenger gates for removed/decommissioned West Remote Gates (i.e., 12 of the existing 18 West Remote Gates would be removed/decommissioned, leaving the remaining six West Remote Gates in operation). As discussed below, this alternative would not meet the Project's purpose or most of the basic Project objectives, and would not be feasible.

This alternative would meet the objectives of the proposed Project related to airfield improvements. This alternative would extend Taxiway D and reconfigure the north airfield taxiway and runway exits and intersections to meet FAA design standards.

This alternative would only partially meet the proposed Project's terminal objectives. The West Terminal Alternative would provide new gates that would support the ability of LAX to accommodate some of the projected future growth in passenger levels in new modern, spacious, and efficient terminal facilities. In addition, the West Terminal building would meet the proposed Project objective of improving international and domestic passenger processing capabilities. However, the alternative would not complement, or be integrated with, the overall terminal system in the CTA, or offer operational flexibility and efficiency. Rather, the west terminal would be a stand-alone facility that would have no connection to the CTA at all. Although this alternative would replace a majority of the West Remote Gates, it would not reduce vehicle activity on the airfield or eliminate busing of passengers. To the contrary, it is likely that a new west terminal could increase the level of busing between the new terminal and gates at the Midfield Satellite Concourse (MSC) North and in the CTA.

The West Terminal Alternative would not meet the majority of the proposed Project's objectives related to roadway system improvements. Although the alternative would include improvements to landside roadways to accommodate the proposed West Terminal, it would not provide a comprehensive network of roadway system improvements that would help to separate and remove airport-related traffic from the local roadway system and provide more distance for maneuvering. The West Terminal Alternative may alleviate some of the existing airport-related traffic congestion on Sepulveda Boulevard by redistributing demand, but it would not meet the objective of reducing the concentration of roadway facilities at and around the Century Boulevard/Sepulveda Boulevard intersection, provide any connections to the CTA or to other terminals within the CTA, or provide more direct access to the ITF West or the APM station in order to encourage the use of those facilities and reduce VMT. Because the West Terminal Alternative would create a new passenger terminal complex in an area separate from the CTA, the alternative would complicate passenger wayfinding and introduce more driver decision points; this would conflict with one of the proposed Project's objectives for the roadway system improvements.

Because it would be a smaller facility than the proposed Project, the West Terminal Alternative would generate fewer employment opportunities during construction. Moreover, although completion of this alternative could occur prior to the 2028 Olympic and Paralympic Games, the West Terminal Alternative would not provide the improvements to the roadway system that would occur under the proposed Project to serve the expected visitors or to accommodate the continued aviation growth that is projected to occur at LAX over the next several decades. The concept of a passenger terminal on the western side of the airport had been proposed in the past as a solution for LAX passenger processing capacity (i.e., a west terminal concept was included in Alternatives A, B, and C of the LAX Master Plan EIR), but this approach was rejected on various grounds. For this and other reasons, the West Terminal would be a less attractive option from the standpoint of community relations and neighborhood objections.

Because the West Terminal would not meet many of the Project objectives, particularly those relating to the landside, the alternative would not achieve the underlying purpose of the Project, which is to support the ongoing modernization of LAX, consistent with the progress that has been made over the past several years in enabling LAX to continue to be a world-class airport, providing excellent passenger service, supporting the economic growth and prosperity of the Los Angeles region, and working closely with the neighboring communities to reduce airport-related impacts.

With respect to feasibility, as mentioned above, the West Terminal Alternative would be built on a portion of the airport that currently is used for West Aircraft Maintenance Area. This area supports a $30 million, Qantas maintenance facility that was opened in 2017 and the recently-completed $36 million Delta Air Lines hangar and GSE maintenance building. There are no adequate replacement sites for these facilities. In addition, the concept of a passenger terminal on the western side of the airport has been studied in the past and rejected as infeasible or undesirable. For these reasons, implementation of the West Terminal Alternative is considered to be infeasible and was not carried forward for further analysis.

5.4.1.3 Alternative Construction Approach Alternative

This alternative would implement the same airfield, terminal, and landside improvements as the proposed Project, but would use a modified construction approach to avoid or substantially lessen the significant construction-related air quality and GHG emission impacts identified in Chapter 4. The construction approach for the proposed Project already includes several measures that would reduce potential impacts to those resources, described in Section 4.1.1, *Air Quality,* and Section 4.4, *Greenhouse Gas Emissions*. These measures include requirements pertaining to the use of trucks and construction equipment that meet U.S. Environmental Protection Agency (USEPA) emission standards, and use of an on-airport rock crushing facility to reduce truck trips and related emissions.

The Alternative Construction Approach Alternative would extend the overall construction period to reduce the amount of daily activity. Some of the significance thresholds for air pollutant emissions focus on the mass of emissions on a per-day basis. By extending the construction schedule, the mass of emissions on a given day would be reduced (although the total mass of emissions would remain the same). With respect to air quality impacts, **Table 5-2** indicates the amount of reduction in daily activity that would be required in order for the daily air pollutant emissions to fall below the SCAQMD CEQA thresholds of significance.

Table 5-2
Alternative Construction Approach (Reduce Daily Activity Duration) Air Pollutant Emissions

Pollutant	SCAQMD Threshold (lbs/day)	Proposed Project Peak Daily Emissions (lbs/day)	Amount (%) of Reduction Required to Avoid Significant Impacts
CO	550	4,247	87%
NO_X	100	781	87%
VOC	75	373	80%
SO_X	150	166	10%
PM_{10}	150	34	NA
$PM_{2.5}$	55	20	NA

Source: **Appendix C** of this EIR.

Key:
CO = carbon monoxide; lbs/day = pounds per day; NO_X = nitrogen oxides; PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter; SO_X = sulfur oxides; VOC = volatile organic compounds.

As indicated in Table 5-2, the greatest amount of reduction that would be required to avoid a significant impact would be needed with respect to NO_X emissions. Daily activities would need to be reduced by approximately 88 percent, which would limit daily construction activities to approximately 1.2 hours within what would otherwise be a 10-hour work day or 2.9 hours within what would otherwise be a 24-hour work day. Even if the size of the equipment crews were reduced in half, based on a lower intensity of daily construction activity and an extended overall duration of construction, activity within a 10-hour work day could only occur for about an hour in order for the construction-related NO_X emissions to remain less than significant. Based on such limitations, however, it would conceivably take approximately 58 years to complete Project construction. This construction approach is impractical. Although such an alternative would reduce daily emissions to a level that is less than significant and would also reduce the daily construction-related trip generation, it would simply increase the overall duration of air pollutant emissions and construction traffic on local roadways. Further, this alternative would increase the durations of significant aircraft noise impacts associated with temporary runway closures necessary to construct the proposed airfield improvement. Moreover, this alternative would delay achievement of the Project objectives, and would miss entirely the objective of completing construction of the Project prior to the 2028 Olympic and Paralympic Games to be held in Los Angeles. Therefore, this alternative was determined to be infeasible and was not carried forward for further analysis.

5.4.1.4 Airfield Improvements Only

An alternative consisting solely of airfield improvements would consist of the improvements described in Section 2.4.1. Those improvements would consist of constructing a westerly extension of Taxiway D, and reconstructing and realigning exits from Runway 6L-24R. This alternative would meet those objectives addressing enhanced airfield safety. In particular, an "Airfield Improvements Only" alternative would enhance the safety of aircraft operations in the north airfield complex, and reconfigure north airfield taxiway and runway exits so that they meet current FAA design standards. Such an alternative would not avoid or substantially lessen those temporary impacts that would occur while these improvements are under construction (e.g., temporary noise, air quality, and greenhouse gas emission impacts from aircraft operations while the each of the two runways in the north airfield complex is temporarily out of service in consecutive years). In addition, such an alternative would not meet LAWA's objectives addressing improving and upgrading terminals and roadways. In particular, this alternative would not provide replacement gates for the West Remote Gates located at the west end of the airport that would be removed in conjunction with the westerly extension of Taxiway D. Moreover, by excluding the proposed concourse and terminal improvements, this alternative would not "[p]rovide for new modern, spacious, and efficient terminal facilities that support the ability to accommodate the projected future growth in passenger levels at LAX and do so in a manner that offers high-quality passenger service and operational flexibility." For these reasons, this alternative was not carried forward for further analysis.

5.4.2 Alternatives Carried Forward for Further Consideration

The following alternatives have been identified for consideration and were carried into the Draft EIR for detailed analyses:

- Alternative 1: No Project Alternative
- Alternative 2: Concourse 0 Only Alternative
- Alternative 3: Terminal 9 Only Alternative
- Alternative 4: LAMP Roadway Improvements plus Terminal 9 Access Alternative

5.4.2.1 Alternative 1: No Project Alternative

Under the No Project Alternative, none of the improvements and activities proposed for the LAX Airfield and Terminal Modernization Project would occur. It is expected that the proposed Concourse 0 site would be used for surface parking (after the temporary taxi and rideshare pick-up area, termed "LAX-it," is no longer needed), which was its use prior to implementation of LAX-it, because the site is already configured to accommodate vehicle entry, parking, and egress, and had a high utilization rate for parking. Under the No Project Alternative, the Terminal 9 site would continue to be used for airport-related uses (commuter aircraft operations and gates, aircraft parking, cargo handling/storage, and GSE facilities). As property acquisition would no longer be required, the private parcels would continue to be used for commercial airport and non-airport parking, and the existing on-airport taxi holding lot would remain in its current location. LAX would continue to experience growth in aircraft operations and passenger activity levels in the future, including through 2028 (the buildout year for the proposed Project), to meet the region's demand for air service. As such, the projected future passenger levels in 2028 under the No Project Alternative would be the same as for the proposed Project (i.e., 110.8 million annual passengers, or MAP).

Descriptions of reasonably foreseeable LAX development by 2028 under the No Project Alternative are provided below and shown on **Figure 5-2**. For the most part, all of these improvements have already been approved and many are already under construction. As such, these improvements represent what would reasonably be expected to occur in the foreseeable future if the proposed Project were not approved, based on current plans. (See State CEQA Guidelines Section 15126.6(e)(3)(C).)

5.4.2.1.1 Airfield Facilities

Under the No Project Alternative, the following improvement will be implemented to improve operations on the airfield:

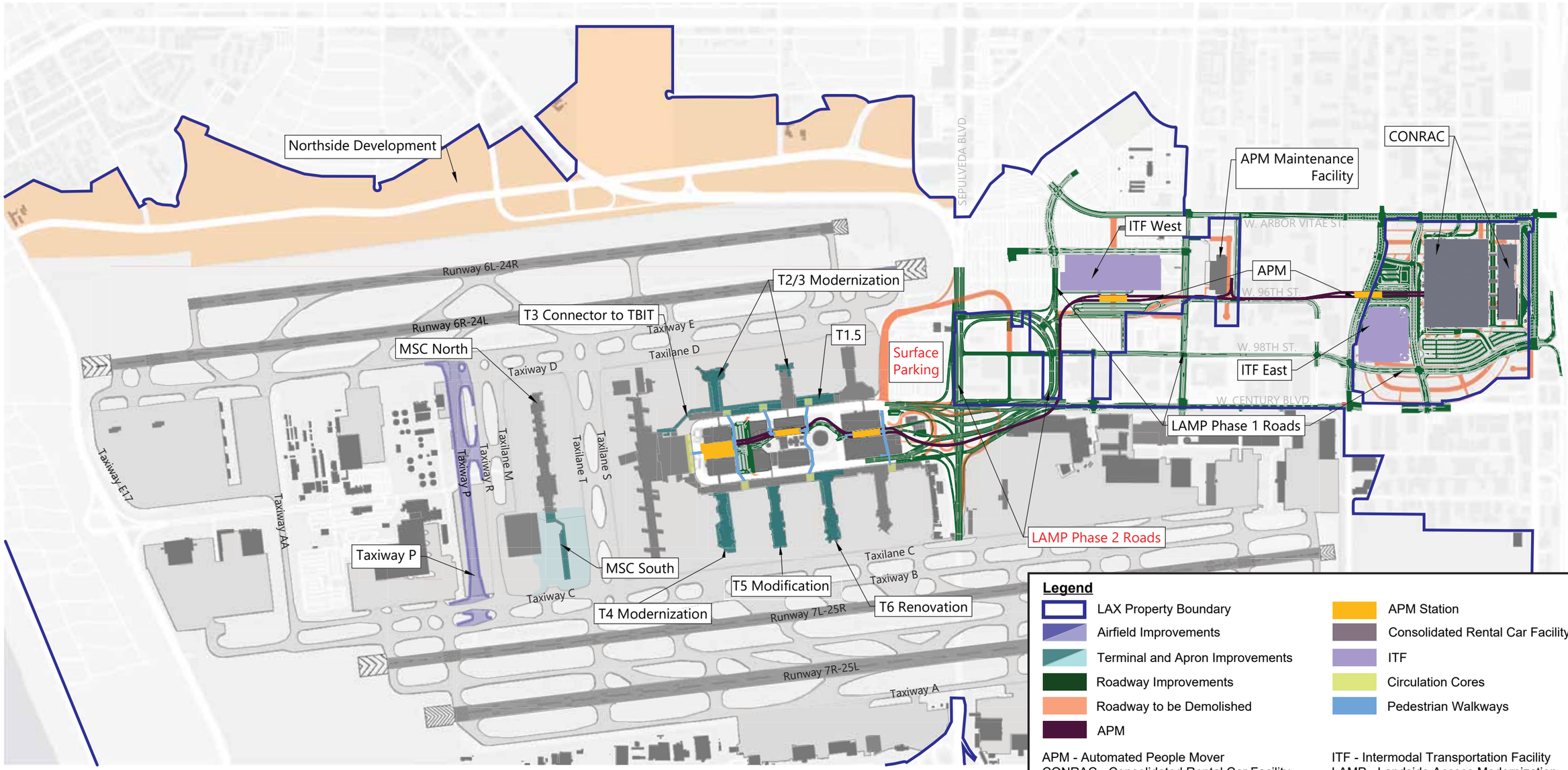
- **Taxiway P.** As part of the MSC North Project, a new north-south ADG VI taxiway will be constructed to connect the north and south airfields. Taxiway P, previously referred to as Taxiway C14, will be 82 feet wide and 3,600 feet long, and will provide connections to existing Taxiway E, Taxiway B, and Taxilane C. Taxiway P has been approved and implementation of this project is not dependent on the proposed Project.

5.4.2.1.2 Terminal Facilities

Under the No Project Alternative, the existing 18 West Remote Gates located at the west end of the airport would not be removed/decommissioned. Passengers would still be bused to and from the West Remote Gates from the CTA. Terminal improvements planned to be completed by 2028, consisting of the construction of new facilities as well as upgrades to existing terminals, include:

- **MSC North Project.** MSC North will be a new multi-level concourse to the west of the existing TBIT.[2] This facility will provide up to 800,000 square feet of floor space and up to 15 aircraft gates[3] to serve both domestic and international flights. The MSC North Project will also include airfield improvements (described above), associated apron areas, a taxilane, and an underground passenger corridor and baggage handling system. The MSC North Project has been approved and is under construction.

[2] At the time of the publication of the Draft EIR, construction of the MSC North Project was nearing completion.
[3] LAWA has operational control over certain gates and, as a result, is able to activate or deactivate gates in operation.



Legend

- LAX Property Boundary
- Airfield Improvements
- Terminal and Apron Improvements
- Roadway Improvements
- Roadway to be Demolished
- APM
- APM Station
- Consolidated Rental Car Facility
- ITF
- Circulation Cores
- Pedestrian Walkways

APM - Automated People Mover
CONRAC - Consolidated Rental Car Facility
ITF - Intermodal Transportation Facility
LAMP - Landside Access Modernization Program

Note:

1. This figure illustrates reasonably foreseeable facilities at LAX in 2028, including land uses and cumulative projects that have been approved or are planned to occur with or without implementation of the LAX Airfield and Terminal Modernization Project, as well as land uses and projects that would only be expected to occur if the LAX Airfield and Terminal Modernization Project were not implemented (identified in orange text).

0 1,500 1,680
Scale Feet

Sources: Los Angeles World Airports, Airport Layout Plan – Existing Layout Plan Sheet Working Draft, June 15, 2017; Esri, HERE, Garmin, OpenStreetMap contributors, and the GIS User Community, June 2020 (Basemap); Los Angeles World Airports, July 2020 (LAMP Phase 1); Ricondo & Associates, Inc., 2020 (LAX LAMP Phase 2)
Prepared by: CDM Smith, October 2020

LAX Airfield and Terminal Modernization Project

Alternative 1: No Project Alternative

Figure **5-2**

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- **MSC South Project.** The MSC South Project will provide a new 95,000-square-foot concourse south of the MSC North concourse, with a 50,000-square-foot elevated circulation corridor between the two concourses, up to eight aircraft gates, taxilane connectors to and from Taxiway C, and associated utilities. The MSC South Project has been approved and future implementation of this project is not dependent on the proposed Project.
- **Terminal 1.5.** Terminal 1.5 is being constructed between existing Terminal 1 and Terminal 2 to provide additional passenger processing facilities for the north passenger terminals. Terminal 1.5 has been approved and is under construction.
- **Terminal 2 and 3 Modernization.** Improvements to Terminals 2 and 3 are under construction, consisting of Terminal 2 concourse upgrades and additional floor area; Terminal 3 concourse demolition and reconstruction to provide additional concourse area and a new operation control center; demolition of the Terminal 3 satellite southern appendages; demolition and reconstruction of the passenger and baggage processing facilities (ticketing buildings) at Terminals 2 and 3, including new facilities for passenger and baggage screening, ticketing, and baggage claim; and a secure connector between Terminals 2 and 3. The Terminal 2 and 3 Modernization improvements have been approved and are under construction.
- **Terminal 3 Connection to TBIT.** The Terminal 3 connector will provide a secure passenger connection between TBIT and Terminal 3, similar to the Terminal 4 connector. The Terminal 3 connection to TBIT has been approved and future implementation of this project is not dependent on the proposed Project.
- **Terminal 4 Modernization.** Terminal 4 improvements include the renovation and/or replacement of portions of the existing concourse and ticketing building, realignment of Taxilane C9, and reconstruction of the apron. The Terminal 4 Modernization project has been approved and future implementation of this project is not dependent on the proposed Project.
- **Terminal 5 Gate Downgauging.** Terminal 5 gate downgauging includes repositioning/restriping of aircraft parking positions and adding two passenger boarding bridges to provide up to two new gates, and downgauging of nine Airplane Design Group (ADG) IV aircraft gates to ADG III aircraft gates within the existing aircraft parking limit line. The Terminal 5 gate downgauging has been approved and future implementation of the downgauging is not dependent on the proposed Project.
- **Terminal 6 Renovation.** Terminal 6 improvements include upgrading the Security Screening Check Point, adding holdroom space and lounge areas, adding up to two gates, and reconfiguring existing aircraft gates and ramp area to improve operations. The Terminal 6 Renovation project has been approved by the LAWA Board of Airport Commissioners, and is currently undergoing FAA review. Future implementation of this project is not dependent on the proposed Project.

5.4.2.1.3 Landside Facilities

Under the No Project Alternative, several ground access improvements will be implemented as part of the previously-approved LAX Landside Access Modernization Program. The program components will collectively improve access to and from LAX in two phases, including:

- **Automated People Mover (APM) System**. The APM will offer passengers an opportunity to bypass the existing roadway loop in the CTA. Departing passengers will be able to access the APM system from two Intermodal Transportation Facilities (ITFs), a Consolidated Rental Car Facility (CONRAC), or a future Metro station. The APM System has been approved and is under construction. If the proposed Project is not approved, the Terminal 9 APM station would not be added; however, the rest of the facility would proceed as originally approved as part of the LAX Landside Access Modernization Program.

- **Intermodal Transportation Facilities (ITF West and ITF East) and Consolidated Rental Car Facility**. The ITF West and ITF East, to be completed in 2021 and 2023, respectively, and the CONRAC, to be completed in 2023, will serve as new points of access to and from LAX, catering to all types of airport passengers and users. Arriving passengers will be able to pick up their baggage, board the APM system, and be quickly and efficiently conveyed directly to the ITFs, CONRAC, or Airport Metro Connector station. The ITF West, ITF East, and CONRAC have been approved. Construction of these facilities is not dependent on the proposed Project.
- **Pedestrian Walkways**. Pedestrian walkway connections in the CTA from the APM stations to the passenger terminals will be completed in 2021. The pedestrian walkway connections in the CTA have been approved. Construction of these connections is not dependent on the proposed Project.
- **Phase 1 and Phase 2 Landside Improvements**. Phase 1 of the LAX Landside Access Modernization Program will be completed by 2023. In addition to the APM, the CONRAC, the ITF West, and the ITF East – which are all described above – Phase 1 includes roadway improvements that will serve those facilities. Phase 2 will include construction of additional roadway improvements focused primarily on CTA access at and around the Century Boulevard/Sepulveda Boulevard intersection. Development of the Phase 2 roadway improvements, which were approved as part of the LAX Landside Access Modernization Program, are reasonably expected to occur in the foreseeable future if the proposed Project is not approved. Under the No Project Alternative, the roadway improvements would proceed as designed under the LAX Landside Access Modernization Program. The roadway system improvements would not include any of the modifications proposed under the proposed Project, including the adjustments to the arrival and departure roadways, modifications to ramps and roadway configurations, and modifications to roadway routing and elevations. The roadway system improvements associated with the proposed Project would serve a function generally similar to that of the LAMP Phase 2 roadway improvements. The LAMP Phase 2 roadway improvements are scheduled to be completed after 2028. However, for purposes of this Draft EIR, these improvements are assumed to be completed in 2028 in order to provide a meaningful comparison of the impacts between the two scenarios, without the distortions that would otherwise occur if the analysis were to focus on a short-term, interim condition that would occur due to the fact that LAMP Phase 2 roadway improvements and the proposed Project have slightly different completion dates. For a more detailed description of the proposed Project roadways, refer to Chapter 2, *Description of the Proposed Project.*

5.4.2.1.4 Miscellaneous Facilities

Other changes to LAX and its surrounding area are also included in the No Project Alternative. These changes include:

- **LAX-it Site Returned to Surface Parking Lot**. Under the No Project Alternative, it is reasonably foreseeable that the site being used temporarily for the LAX-it taxi and rideshare pick-up area would be returned to a surface parking lot after the LAX-it facility is no longer needed as this was the long-standing historical use of the site prior to its current use as a temporary taxi and rideshare pickup area.
- **LAX Northside Development**. The LAX Northside Development will develop approximately 340 acres of under-utilized land on the north side of the airport with a mix of commercial uses (including retail, restaurant, office, hotel, civic, and other uses) to better serve the local communities of Westchester and Playa del Rey. The LAX Northside Development has been approved and its implementation is not dependent on the proposed Project.

- **Delta Hangar Complex Demolition**. To enable the construction of the APM guideway, the former Delta Air Lines hangar complex, a 182,500-square-foot building located south of Century Boulevard between Sepulveda Boulevard and Avion Drive, will be demolished. Demolition commenced in 2019, and the final increment of the demolition is to be completed in 2020.

5.4.2.2 Alternative 2: Concourse 0 Only Alternative

Under Alternative 2, only Concourse 0 would be constructed as a terminal area element. Concourse 0 is planned as a concourse facility with eight to 11 aircraft gates[4] that would attach to, and extend to the east of, Terminal 1 in the current location of the LAX-it lot. As with the proposed Project, the two westernmost gates at Concourse 0 would replace the two easternmost existing gates at Terminal 1. As such, net new gates for Alternative 2 would be six to nine aircraft gates. The new gates associated with Concourse 0 would serve to replace the nine existing West Remote Gates that would be eliminated by the proposed westerly extension of Taxiway D. The remaining nine of the 18 West Remote Gates would continue to operate. As discussed in Section 2.4.2.1 in Chapter 2, *Description of the Proposed Project*, Concourse 0 would consist of up to seven levels, including four levels for the proposed concourse/passenger operations and potentially three additional levels of office space that LAWA is considering as an option. There would be a total floor area of up to 745,000 square feet for concourse/passenger operations, and potentially up to an additional 318,000 square feet of office space used for administrative purposes. In conjunction with construction of the passenger building and aircraft gates, development of Concourse 0 would include construction of an aircraft parking apron, including two aircraft parking positions; the easterly extension of Taxiway D as an ADG V taxiway; the easterly extension of Taxiway E as an unrestricted ADG V/restricted ADG VI taxiway; and the relocation of the easternmost portion of Vehicle Service Road E. A paved area would be located at the eastern ends of Taxiways D and E that could be used for aircraft pushbacks for the northeastern gate at Concourse 0 and could also be used to temporarily hold departing aircraft waiting to access Runway 6R-24L for takeoff.

Alternative 2 was developed as an alternative to the proposed Project to minimize impacts related to the construction and operation of Terminal 9. Because Alternative 2 would not require constructing Terminal 9, or the Terminal 9 APM station, parking facility, or ground access improvements, Alternative 2 would have the potential to reduce impacts related to the construction and operation of these facilities. Alternative 2 would avoid or minimize Project-related significant (or significant but mitigable) impacts related to air quality, GHG emissions, and construction noise.

Alternative 2 would have the same airfield improvements as the proposed Project; however, its terminal improvements would not include construction of Terminal 9, the Terminal 9 parking facility, new APM station, or the taxiway improvements associated with Terminal 9. The landside improvements under Alternative 2 would be the same as the proposed Project, with the exception of the roadway improvements designed to integrate Terminal 9 with the roadway system, which would not be included. The airfield, terminal, and landside improvements under Alternative 2 are listed below and illustrated in **Figure 5-3**.

[4] The range of gates is related to size of gates. The gating at Concourse 0 could accommodate up to 11 narrowbody aircraft or five widebody aircraft and three narrowbody aircraft for a total of eight gates.

5.4.2.2.1 Airfield Improvements

Airfield improvements under Alternative 2 include:

- **Taxiway D Westerly Extension**. Taxiway D would be extended to the west, which would improve the operational efficiency of aircraft movements in the north airfield, particularly related to large aircraft.
- **Runway 6L-24R Exits**. The Runway 6L-24R exits would be modified to include construction of new exits outside the high-energy zones of the runway and the removal or decommissioning of existing exits that cross the high-energy zones. The purpose of these modifications is to avoid taxiing aircraft from crossing the portion of the runway where departing aircraft are moving at a high speed before lifting into the air.

5.4.2.2.2 Terminal Improvements

Terminal improvements under Alternative 2 include:

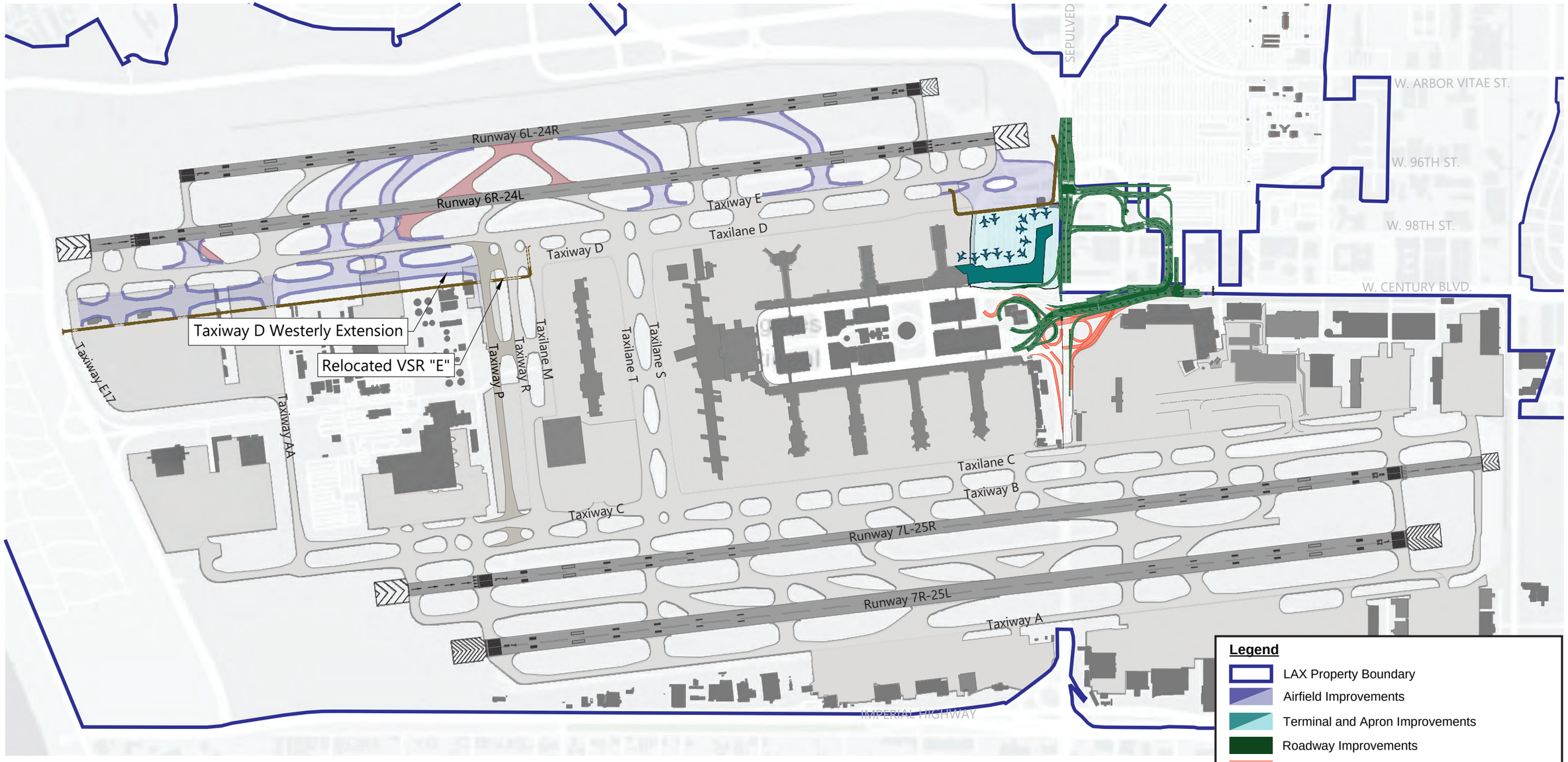
- **Concourse 0**. Concourse 0 would be an eight- to 11-gate concourse facility (adding six to nine net new gates) serving both domestic and international flights.
- **Removal/Replacement of West Remote Passenger Gates**. Alternative 2 includes the removal of nine to 12 of the existing 18 West Remote Gates. Nine of the existing west remote passenger gates would remain under Alternative 2.

5.4.2.2.3 Landside Improvements

The landside improvements under Alternative 2 would be the same as the proposed Project except that no access to Terminal 9 would be provided. The improvements that would be included consist of arrival and departure roadways with new roadway segments that would improve vehicle access to, and egress from, the existing CTA. More specifically, Alternative 2 would reroute the entrance to the CTA from Sepulveda Boulevard via a new at-grade ramp for northbound traffic and a new grade-separated ramp for southbound traffic, all of which would tie into a new elevated roadway system that would include vehicle queuing areas. Alternative 2 would reroute exiting CTA vehicles to Sepulveda Boulevard via new grade-separated ramps north of Century Boulevard to extend the merging zones and vehicle queuing areas. This would improve traffic flow into and out of the CTA.

5.4.2.2.4 Enabling Projects

Alternative 2 would include enabling projects, located in or near the proposed improvement sites, that would remove and/or relocate existing airfield, terminal, and landside elements to accommodate the proposed improvements. The enabling projects that would be implemented under Alternative 2 would be the same as the proposed Project with respect to the Taxiway D Extension West, the Runway 6L-24R Exits, Concourse 0, and the landside project components. These enabling projects are further described in Table 2-4 in Chapter 2, *Description of the Proposed Project*.



Sources: Los Angeles World Airports, Airport Layout Plan – Existing Layout Plan Sheet Working Draft, June 15, 2017 (Runway 6L-24R exit reconfiguration and Taxiway D westerly extension); Esri, HERE, Garmin, OpenStreetMap contributors, and the GIS User Community, June 2020 (Basemap) Ricondo & Associates, Inc., 2020 (Taxiways D and E and Terminal/Apron Improvements); CF Wright Consulting, LLC, July 2020 (improved CTA entrance/exit)
Prepared by: CDM Smith, October 2020

LAX Airfield and Terminal Modernization Project	Alternative 2: Concourse 0 Only	Figure **5-3**

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5.4.2.3 Alternative 3: Terminal 9 Only Alternative

Under Alternative 3, Terminal 9 would be constructed as a terminal area element. Terminal 9 is planned as an international and domestic terminal facility with 12 to 18 gates.[5] The new gates associated with Terminal 9 would serve to replace existing West Remote Gates that would be eliminated by the proposed westerly extension of Taxiway D or otherwise decommissioned. Based on the low end of the range of new gates that could occur at Terminal 9, 12 of the existing West Remote Gates would be removed or decommissioned and six would remain in operation. At the high end of the range for Terminal 9 (i.e., 18 narrowbody gates), 15 of the 18 West Remote Gates would be removed or decommissioned and, similar to the proposed Project, three of the West Remote Gates would remain to provide operational flexibility. As discussed in Section 2.4.2.2 in Chapter 2, *Description of the Proposed Project*, Terminal 9 would be a 1,178,000-square-foot, independently operating, four-level facility with a central passenger processing core, concourses that extend to the east and west of the core, and a pedestrian connector to Terminal 8. All necessary passenger processing functions would be provided within Terminal 9. In conjunction with construction of the passenger building and aircraft gates, development of Terminal 9 would include construction of an aircraft parking apron and a taxilane connecting the terminal to the airfield; relocation and easterly extension of Taxilane C from Taxiway C3 to Taxiway B1; and relocation of Vehicle Service Road C. The relocated vehicle service road would be designed at ADG VI separation from Taxiway C and the relocated/extended Taxilane C would be designed at ADG VI separation from Taxiway B. Other improvements related to Terminal 9 would include construction of a parking facility and a Terminal 9 APM station (platform), and pedestrian corridors connecting these facilities to the terminal.

Alternative 3 was developed as an alternative to the proposed Project to minimize impacts related to the construction and operation of Concourse 0. Because Alternative 3 would not require constructing Concourse 0 or its associated airfield improvements, Alternative 3 would have the potential to reduce impacts related to the construction and operation of these facilities, specifically Project-related significant (or significant but mitigable) impacts associated with air quality, GHG emissions, and construction noise.

Alternative 3 would have the same airfield and landside improvements as the proposed Project; however, its terminal improvements would not include construction of Concourse 0, including the proposed paved area that would be located at the eastern ends of Taxiways D and E that could be used for aircraft pushbacks or to temporarily hold departing aircraft waiting to access Runway 6R 24L for takeoff. Under Alternative 3, it is reasonably foreseeable that the site proposed for Concourse 0 would be returned to a surface parking lot when the LAX-it lot is no longer needed because the site is already configured to accommodate vehicle entry, parking, and egress, and had a high utilization rate for parking. The airfield, terminal, and roadway improvements under Alternative 3 are listed below and illustrated in **Figure 5-4**.

5.4.2.3.1 Airfield Improvements

Airfield improvements under Alternative 3 include:

- **Taxiway D Westerly Extension**. Taxiway D would be extended to the west, which would improve the operational efficiency of aircraft movements in the north airfield, particularly related to large aircraft.
- **Runway 6L-24R Exits**. The Runway 6L-24R exit would be modified to eliminate exits within "high-energy zones" to avoid crossing points for taxiing aircraft in areas where departing aircraft are moving at a high speed before lifting into the air.

[5] The range of gates is related to size of gates. The gating at Terminal 9 could accommodate up to 12 widebody aircraft or 18 narrowbody aircraft.

5.4.2.3.2 Terminal Improvements

Terminal improvements under Alternative 3 include:

- **Terminal 9**. Terminal 9 would be a 12- to 18-gate international and domestic terminal facility.
- **Removal/Replacement of West Remote Passenger Gates**. Alternative 3 includes the removal or decommissioning of between 12 and 15 of the existing 18 west remote passenger gates. Three to six of the existing west remote passenger gates would remain under Alternative 3.

5.4.2.3.3 Landside Improvements

The landside improvements associated with Alternative 3 would include a Terminal 9 parking facility, construction of an APM station at Terminal 9 on the previously approved LAX APM line, and construction of a pedestrian corridor between Terminals 8 and 9 that would bridge across Sepulveda Boulevard.

The roadway component of the landside improvements under Alternative 3 would be the same as the proposed Project. In addition to arrival and departure roadways and new roadway segments that would improve vehicle access to, and egress from, the existing CTA, new roadways would provide access to and egress from Terminal 9, as well as circulation within the terminal area.

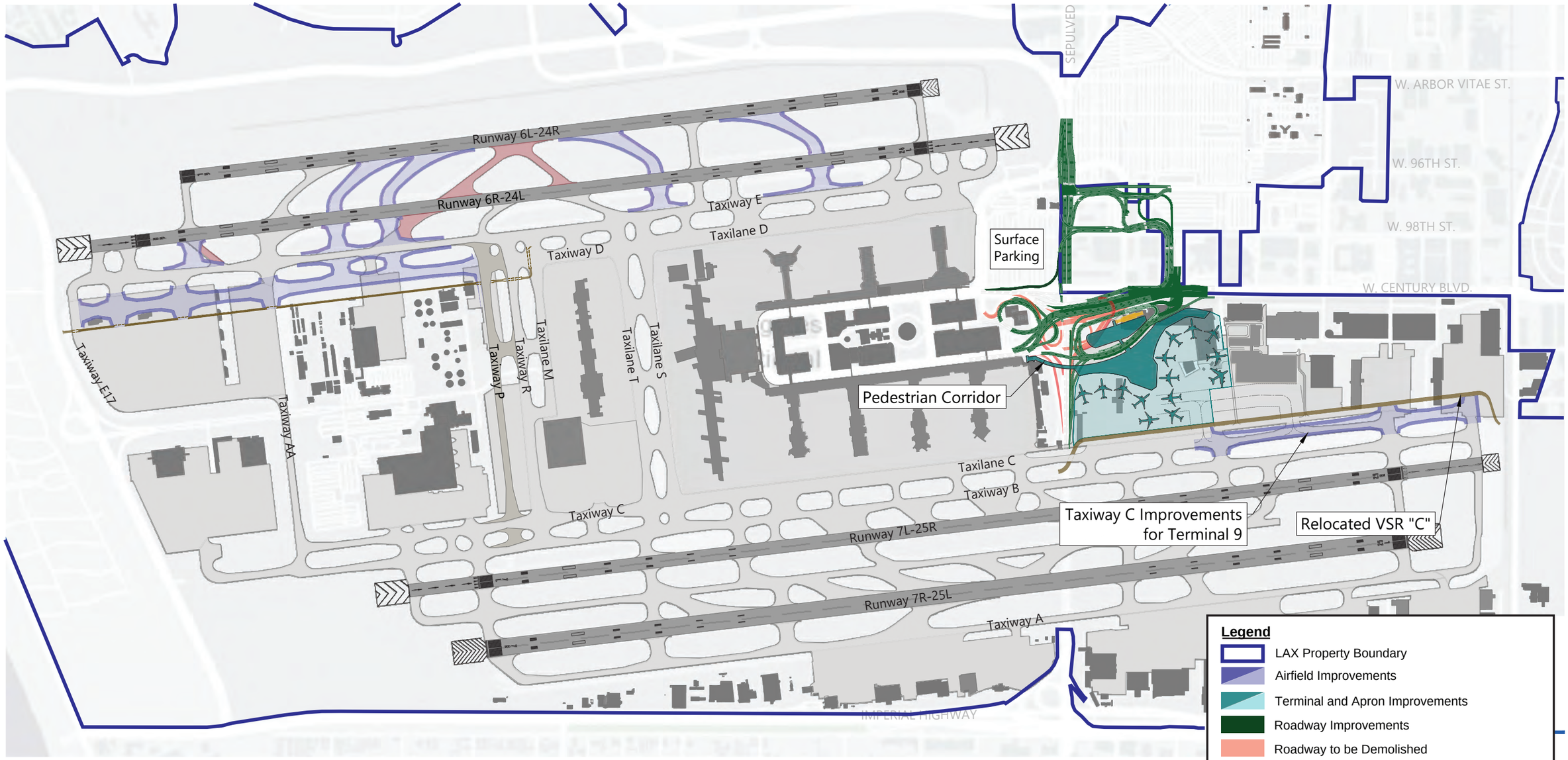
The roadway system for Terminal 9 would have an upper level roadway for departures and a lower level roadway for arrivals, or possibly a single level for both arrivals and departures. Alternative 3 would reroute the entrance to the CTA from Sepulveda Boulevard via a new at-grade ramp for northbound traffic and a new grade-separated ramp for southbound traffic, all of which would tie into a new elevated roadway system that would include vehicle queuing areas. Alternative 3 would reroute exiting CTA vehicles to Sepulveda Boulevard via new grade-separated ramps north of Century Boulevard to extend the merging zones and vehicle queuing areas. This would improve traffic flow into and out of the CTA. Alternative 3 would also provide connections to the proposed Terminal 9 parking facility.

5.4.2.3.4 Enabling Projects

Alternative 3 would include enabling projects, located in or near the proposed improvement sites, that would remove and/or relocate existing airfield, terminal, and landside elements to accommodate the proposed improvements. The enabling projects that would be implemented under Alternative 3 would be the same as the proposed Project with respect to the Taxiway D Extension West, the Runway 6L-24R Exits, Terminal 9, and the landside project components. These enabling projects are further described in Table 2-4 in Chapter 2, *Description of the Proposed Project*.

5.4.2.4 Alternative 4: Approved LAMP Roadway Improvements plus Terminal 9 Access Alternative

Under Alternative 4, both the airfield improvements and the terminal improvements would be the same as the proposed Project. Most of the airfield improvements would occur within the north airfield and would include the westerly extension of Taxiway D in the western portion of the north airfield and the relocation and reconfiguration of runway exits from Runway 6L-24R. The terminal improvements would include construction of Concourse 0 as a new easterly extension of Terminal 1; construction of Terminal 9, a new passenger terminal located southeast of the Sepulveda Boulevard/Century Boulevard intersection, including a new parking facility and APM station; and improvements and modifications to existing taxiways near Concourse 0 and Terminal 9 to facilitate aircraft access to and from the gates at those facilities. However, roadway improvements under Alternative 4 would not include the roadway system developed for the proposed Project. Instead, Alternative 4 would implement the already-approved LAMP Phase 2 roadway system, modified to add access to Terminal 9.



Sources: Los Angeles World Airports, Airport Layout Plan – Existing Layout Plan Sheet Working Draft, June 15, 2017 (Runway 6L-24R exit reconfiguration and Taxiway D westerly extension); Esri, HERE, Garmin, OpenStreetMap contributors, and the GIS User Community, June 2020 (Basemap); Ricondo & Associates, Inc., 2020 (Taxiway C and Terminal/Apron Improvements); CF Wright Consulting, LLC, September 2018 (improved CTA entrance/exit)
Prepared by: CDM Smith, October 2020

LAX Airfield and Terminal Modernization Project	Alternative 3: Terminal 9 Only	Figure **5-4**

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Alternative 4 was developed in light of its potential to reduce the construction and operations-related impacts of the roadway modifications under the proposed Project, specifically Project-related significant (or significant but mitigable) impacts associated with air quality, greenhouse gas emissions, construction noise, and transportation (VMT).

Similar to the proposed Project, the Alternative 4 roadway system would include arrival and departure roadways with new roadway segments that would modify vehicle access to, and egress from, the existing CTA. Similar to the proposed Project, the LAMP Phase 2 roadway improvements would shift northward the entrance to the CTA from northbound Sepulveda Boulevard, which is currently near Century Boulevard just north of the Sepulveda Tunnel, and instead move that access point up to 96th Street. Also similar to the proposed Project is the LAMP Phase 2 design for traffic outbound from the CTA and destined for Sepulveda Boulevard, which would occur via a combination of elevated ramps over Century Boulevard leading north to the intersection of 96th Street and Sepulveda Boulevard. The most notable differences between the two roadway designs pertain primarily to the access routes between the CTA and southbound Sepulveda Boulevard. Under LAMP Phase 2, inbound traffic would take new ramps on the west side of Sepulveda Boulevard to access the CTA, similar to how Sky Way currently connects between southbound Sepulveda Boulevard and the CTA; under the proposed Project, such access would be provided via a new flyover ramp that would cross over Sepulveda Boulevard and circle around on an elevated ramps system to connect to the CTA from the east. Relative to outbound traffic from the CTA to southbound Sepulveda Boulevard, the LAMP Phase 2 roadway design includes CTA exit ramps that connect to Sepulveda Boulevard close to the Sepulveda Tunnel, whereas the proposed Project roadway design would route such traffic out of the CTA on an elevated roadway system that would carry the traffic above, and separate from, the local roadway system before merging back into southbound Sepulveda Boulevard via a flyover ramp that merges at a point well north of, and away from, the Sepulveda Tunnel. As compared to the proposed Project, the Alternative 4 roadway system, which is based on the LAMP Phase 2 roadway design in the area immediately east of the CTA, would not provide extended vehicle queuing areas for vehicles entering the CTA from the north (i.e., from southbound Sepulveda Boulevard) or exiting the CTA heading to the south (i.e., onto southbound Sepulveda Boulevard), and would not create a more consolidated entry point east of Sepulveda Boulevard for vehicles entering the CTA.

The airfield, terminal, and roadway improvements under Alternative 4 are listed below and shown in **Figure 5-5**.

5.4.2.4.1 Airfield Improvements

Airfield improvements under Alternative 4 include:

- **Taxiway D Westerly Extension**. Taxiway D would be extended to the west, which would improve the operational efficiency of aircraft movements in the north airfield, particularly related to large aircraft.
- **Runway 6L-24R Exits**. The Runway 6L-24R exits would be modified to eliminate exits within "high-energy zones" to avoid crossing points for taxiing aircraft in areas where departing aircraft are moving at a high speed before lifting into the air.

5.4.2.4.2 Terminal Improvements

Terminal improvements under Alternative 4 include:

- **Concourse 0**. Concourse 0 would be an 8- to 11-gate concourse facility (adding 6 to 9 net new gates) serving both domestic and international flights.
- **Terminal 9**. Terminal 9 would be a 12- to 18-gate international and domestic terminal facility with capability to support ADG VI operations.

- **Removal/Replacement of West Remote Passenger Gates**. Under Alternative 4, nine existing west remote passenger gates would be removed and an additional six west remote passenger gates would be decommissioned. Three of the existing west remote passenger gates would remain for operational flexibility, as they would under the proposed Project.

5.4.2.4.3 Landside Improvements

The landside improvements associated with Alternative 4 would include a Terminal 9 parking facility, construction of a seventh APM station at Terminal 9 on the previously approved LAX APM line, and construction of a pedestrian corridor between Terminals 8 and 9 that would bridge across Sepulveda Boulevard.

Under Alternative 4, the roadway component of the landside improvements would consist of the LAMP Phase 2 roadway system, with modifications to provide access to Terminal 9. Under this alternative, the LAMP Phase roadway system would be completed by 2028.

5.4.2.4.4 Enabling Projects

Alternative 4 would include enabling projects, located in or near the proposed improvement sites, that would remove and/or relocate existing airfield, terminal, and landside elements to accommodate the proposed improvements. The enabling projects that would be implemented under Alternative 4 would be the same as the proposed Project with respect to the Taxiway D Extension West, the Runway 6L-24R Exits, Concourse 0, and Terminal 9 project components. The enabling projects associated with the landside improvements would differ somewhat from the proposed Project. Implementation of the LAMP Phase 2 roadways under Alterative 4 would require acquisition of several of the same parcels as the proposed Project (i.e., 9600 S. Sepulveda Boulevard and related addresses, and 6155 W. 98th Street), but would not require acquisition of 9750 S. Vicksburg Avenue, and would require less acquisition of 9700 S. Sepulveda Boulevard. In addition, this alternative would affect fewer of the LAX gateway pylons. These enabling projects are further described in Table 2-4 in Chapter 2, *Description of the Proposed Project.*

5.5 Evaluation of Alternatives

The following describes the environmental impacts associated with each of the alternatives described in Section 5.4.2 above as compared to significant impacts of the proposed Project. The discussion below identifies environmental impacts of each resource category as they relate to the Project alternatives. Impacts are discussed collectively for horizon year 2028.

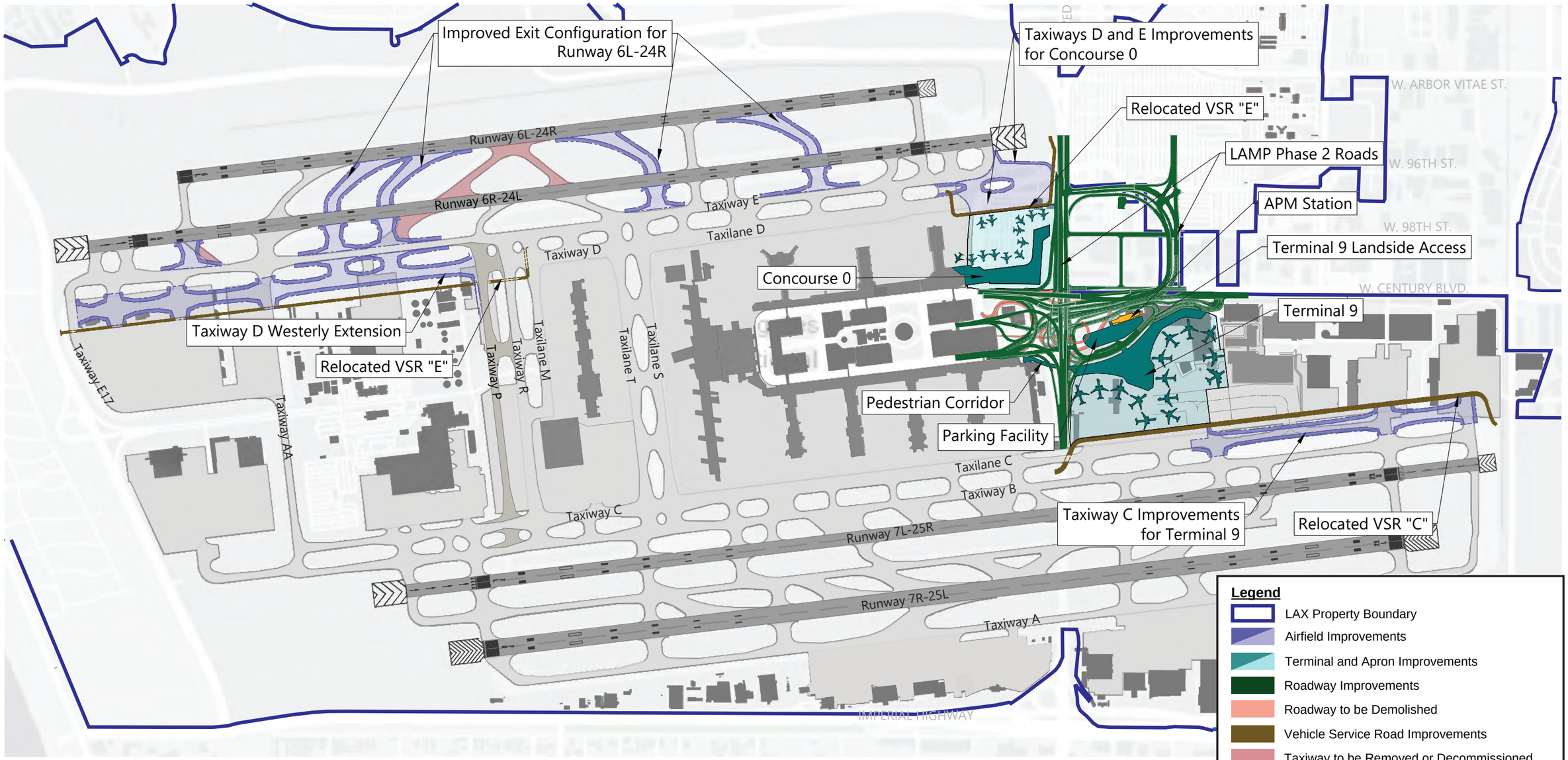
5.5.1 Alternative 1: No Project Alternative

5.5.1.1 Air Quality and Human Health Risk

5.5.1.1.1 Air Quality

5.5.1.1.1.1 Construction

As discussed in Section 4.1.1, *Air Quality*, the proposed Project would result in significant and unavoidable emissions of NO_X associated with construction-related activities throughout the construction period. In addition, the proposed Project would result in a net increase in short-term emissions of criteria pollutants associated with temporary runway closures, with a significant and unavoidable impact with respect to regional emissions of NO_X, CO, VOC, and SO_X for two 4.5-month periods. Localized construction concentrations would be less than significant for all criteria pollutants.



Sources: Los Angeles World Airports, Airport Layout Plan – Existing Layout Plan Sheet Working Draft, June 15, 2017 (Runway 6L-24R exit reconfiguration and Taxiway D westerly extension); Ricondo & Associates, Inc., 2020 (Taxiways D and E, Taxiway C and Terminal/Apron Improvements); CDM Smith Inc., 2020 (Roadway Improvements)
Prepared by: CDM Smith, October 2020

LAX Airfield and Terminal Modernization Project

Alternative 4: Approved LAMP Roadway Improvements plus Terminal 9 Access

Figure **5-5**

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The No Project Alternative would not involve construction of the airfield improvements, Concourse 0, or Terminal 9, which are proposed under the Project. In place of the proposed roadway improvements, the No Project Alternative would implement the approved LAMP Phase 2 roadway improvements, construction of which would emit substantially less total emissions than would construction of the proposed Project. Emissions associated with construction of the LAMP Phase 2 roadways would be a subset of the peak day emissions presented in the LAMP EIR and would be less than significant for CO, VOC, SO_X, PM_{10}, or $PM_{2.5}$; projected emissions of NO_X would be less than significant after mitigation.[6] Because the LAMP Phase 2 roadway construction emissions would be a subset of the peak day emissions for which local concentration modeling was performed in the LAMP EIR, it is expected that construction-related impacts of the LAMP Phase 2 roadways with respect to local construction concentrations of CO, NO_2, SO_2, PM_{10}, and $PM_{2.5}$ would be less than significant. Further, the No Project Alternative would not require any runway closures, thereby avoiding the proposed Project's short-term significant and unavoidable impacts with respect to construction emissions of CO, VOC, and SO_X. Overall, construction-related impacts of all criteria air pollutants (i.e., CO, VOC, NO_X, SO_X, PM_{10}, and $PM_{2.5}$) under the No Project Alternative would be ***less than significant***.

5.5.1.1.1.2 Operations

Emissions

As discussed in Section 4.1.1, *Air Quality*, the proposed Project would result in significant and unavoidable emissions of NO_X, SO_X, PM_{10}, and $PM_{2.5}$ associated with operational activities.

In addition to evaluating air quality impacts of the proposed Project, Section 4.1.1 also includes an evaluation of emissions associated with the Without Project scenario for informational purposes, in order to isolate the impacts of the proposed Project from changes that would occur between the baseline year and the 2028 buildout year with or without Project implementation. The Without Project scenario is very similar to the No Project Alternative, with one notable exception – the Without Project scenario does not include the LAMP Phase 2 roadways, whereas the No Project Alternative does, for reasons described previously.[7] Because of its similarity to the No Project Alternative, the Without Project analysis serves as the basis of the No Project Alternative analysis and is therefore discussed in this analysis.

As discussed in Section 4.1.1, *Air Quality*, the Without Project scenario would result in significant and unavoidable emissions of NO_X, SO_X, PM_{10}, and $PM_{2.5}$ associated with operational activities. These emissions would be less than, but similar to, those of the proposed Project; SO_X emissions would be slightly higher under the Without Project Alternative compared to the proposed Project due to longer aircraft taxi times assumed under the Without Project scenario than under the proposed Project.[8]

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6 City of Los Angeles, Los Angeles World Airports, *Final Environmental Impact Report for Los Angeles International Airport (LAX) Landside Access Modernization Program*, (SCH 2015021014), Appendix F, Attachment F.1, February 2017. Available: https://www.lawa.org/en/connectinglax/automated-people-mover/documents.

7 The Without Project scenario analyzed in Section 4.1.1 includes the LAMP Phase 1 roadway construction only, while the No Project scenario also includes the LAMP Phase 2 roadway construction. The LAMP Phase 1 roadway construction is scheduled to be completed prior to 2028, whereas the LAMP Phase 2 roadways are scheduled to be completed after 2028. Moreover, because the LAMP Phase 1 roadway construction would be less intense than the LAMP Phase 2 roadway construction, the Without Project scenario provides a more conservative future baseline (lower emissions) for comparison to the proposed Project scenario in Section 4.1.1.

8 The comparison of the proposed Project to Without Project operational emissions is included in Section 4.1.1 *Air Quality*, Table 4.1.1-11. As shown in the table, emissions of NO_X, SO_X, PM_{10}, and $PM_{2.5}$ from aircraft operations, including taxiing, under the Without Project scenario would be lower than those under the proposed Project. However, emissions from traffic, parking, and stationary sources would be higher under the proposed Project than the Without Project scenario for NO_X, PM_{10}, and $PM_{2.5}$ by enough to make emissions of those pollutant higher under the proposed Project for all sources. Because SO_X emissions are minimal for all sources except aircraft, SO_X emissions would remain higher under the Without Project scenario after considering all operational sources.

The No Project Alternative would not include any of the proposed Project components. However, as noted above, this alternative would include implementation of the LAMP Phase 2 roadways instead of the roadway system proposed as part of the Project. The No Project Alternative is similar to the Without Project scenario evaluated in Section 4.1.1, *Air Quality*, except that it assumes that the LAMP Phase 2 roadway improvements would be constructed by 2028, in order to provide a comparison of impacts to the proposed Project. Both scenarios assume future increases in passenger activity at LAX, as well as development of reasonably foreseeable future projects at LAX. The No Project Alternative differs from the Without Project scenario in its inclusion of the LAMP Phase 2 roadway system, but regional vehicle miles traveled and associated air pollutant emissions are anticipated to be comparable between the scenarios (i.e., the LAMP Phase 2 roadways would not substantially alter the distances traveled on the roadways around the airport compared to the Without Project scenario). Therefore, the operations-related emissions under the No Project Alternative would be essentially the same as those under the Without Project scenario. The Without Project scenario would result in significant and unavoidable emissions of NO_X, SO_X, PM_{10}, and $PM_{2.5}$ compared to baseline conditions. Thus, it is expected that operations-related impacts of The No Project Alternative with respect to regional emissions of NO_X, SO_X, PM_{10}, and $PM_{2.5}$ would be ***significant and unavoidable***.

Concentrations

As discussed in Section 4.1.1, *Air Quality*, localized operational concentrations would be significant and unavoidable with respect to PM_{10} under the proposed Project (Table 4.1.1-14), and operational concentrations would be significant and unavoidable with respect to PM_{10} and 1-hour NO_2 under the Without Project scenario (Table 4.1.1-15). Localized concentrations of PM_{10} would be driven by road dust from traffic. Significant localized PM_{10} concentrations would occur within the ITF West facility and along the roadways leading to that facility, along 98th Street, and along Aviation Boulevard at the entrance to the CONRAC under both the proposed Project and Without Project scenarios, and at the location of the new CTA entry roadway under the proposed Project. The No Project Alternative differs from the Without Project alternative in its inclusion of the LAMP Phase 2 roadway system, which would increase traffic flows to the CONRAC and ITF West. Under the Without Project scenario, and likewise under the No Project Alternative, localized concentrations of PM_{10} at the location of the proposed Project CTA new entry roadway would be less than significant. However, near the intersection of 96th Street and Airport Boulevard, the peak localized concentration location, daily traffic volumes would be expected to increase by 7 percent under the No Project Alternative as compared to the Without Project scenario, thereby resulting in a similar increase in localized concentrations of PM_{10} from road dust in that area. Traffic volume increases at the peak location were estimated by summing modeled traffic volumes for the roadway links which make up the peak intersection under the No Project Alternative and comparing them against the summed modeled traffic volumes for the roadway links which make up the peak intersection under Without Project scenario. Detailed calculations are provided in **Appendix C.7** of this EIR. This increased traffic would be expected to result in a peak localized concentration under the No Project Alternative that would be comparable to that of the proposed Project. Therefore, it is expected that, under the No Project Alternative, the operations-related local concentrations of PM_{10} would be comparable to those of the proposed Project, resulting in ***significant and unavoidable*** localized concentrations of PM_{10}.

As shown in Table 4.1.1-15, localized concentrations of NO_2 associated under the Without Project scenario would be significant and unavoidable when compared to baseline conditions, driven by emissions from aircraft operations. Aircraft operations under the Without Project scenario would be virtually indistinguishable to those under the No Project Alternative. Because the airfield improvements under the proposed Project would not occur with the No Project Alternative, aircraft taxi times would be longer, thereby increasing emissions and localized concentrations compared to the proposed Project. Therefore, it is expected that operational impacts from the No Project Alternative with respect to local effects of the

emissions of NO_2 would be greater than under the proposed Project. Unlike the proposed Project, which would have less than significant localized concentrations of NO_2, under the No Project Alternative, operational concentrations of NO_2 would be ***significant and unavoidable***. Detailed calculations are provided in **Appendix C.7** of this EIR.

As shown in Table 4.1.1-15, localized concentrations of CO, SO_2, and $PM_{2.5}$ associated with the Without Project scenario would be less than significant when compared to baseline conditions. Localized concentrations of CO and SO_2 are driven by emissions from aircraft operations, which would be virtually indistinguishable under the No Project Alternative as compared to the Without Project scenario. Localized concentrations of $PM_{2.5}$ are driven by vehicle traffic, which would be higher at peak locations under the No Project Alternative as compared to the proposed Project but would not result in localized concentrations that would approach the $PM_{2.5}$ threshold. Therefore, while it is expected that operational impacts from the No Project Alternative with respect to local effects of the emissions of CO, SO_2, and $PM_{2.5}$ would be greater than those of the proposed Project, as demonstrated in Table 4.1.1-16, the local effects of these pollutants would still be ***less than significant***.

5.5.1.1.1.3 Cumulative

As discussed in Section 4.1.1, *Air Quality*, the geographic study area for evaluation of cumulative construction air quality impacts is focused primarily on projects at LAX and the immediate surroundings. Based on the estimated emissions from construction of other development projects at and immediately adjacent to LAX whose construction could overlap with construction of the proposed Project, cumulative construction emissions of CO, VOC, NO_X, SO_X, PM_{10}, and $PM_{2.5}$ would exceed SCAQMD's quarterly construction emission significance thresholds. Therefore, cumulative construction emissions of these pollutants would be cumulatively significant.

SCAQMD has provided guidance on an acceptable approach to addressing the cumulative impacts issue for air quality.[9] This guidance states as follows: "As Lead Agency, the AQMD uses the same significance thresholds for project specific and cumulative impacts for all environmental topics analyzed in an Environmental Assessment or EIR … Projects that exceed the project-specific significance thresholds are considered by the SCAQMD to be cumulatively considerable. … Conversely, projects that do not exceed the project-specific thresholds are generally not considered to be cumulatively significant."

Construction of the proposed Project would exceed the Project-specific construction emission thresholds for CO, VOC, NO_X, and SO_X. As a result, based on the SCAQMD cumulative impact guidance discussed above, the contribution of the proposed Project to cumulative construction-related air pollutant emissions impacts would be cumulatively considerable for CO, VOC, NO_X, and SO_X. The cumulative construction impact would be significant and unavoidable.

The No Project Alternative would not involve construction of the airfield improvements, Concourse 0, or Terminal 9. In place of the proposed roadway improvements, the No Project Alternative would implement the LAMP Phase 2 roadway improvements, construction of which would emit substantially less emissions than would construction of the proposed Project. As discussed above under Section 5.5.1.1.1.1, construction-related impacts of all criteria air pollutants (i.e., CO, VOC, NO_X, SO_X, PM_{10}, and $PM_{2.5}$) under the No Project Alternative would be less than the proposed Project and would be less than significant.

As discussed above under Section 5.5.1.1.1.2, the No Project Alternative would have comparable regional traffic-related emissions to the proposed Project, and the operations-related emissions under the No Project Alternative would be driven by increased aircraft activity, which would occur irrespective of the

[9] South Coast Air Quality Management District, *White Paper on Potential Control Strategies to Address Cumulative Impacts from Air Pollution*, Appendix D – Cumulative Impact Analysis Requirements Pursuant to CEQA, August 2003, page D-3.

proposed Project. The No Project Alternative would be anticipated to have significant and unavoidable impacts with respect to regional emissions of NO_X, SO_X, PM_{10}, and $PM_{2.5}$ from operations. In addition, is expected that, under the No Project Alternative, the operations-related local concentrations of PM_{10} would be comparable to those of the proposed Project, resulting in significant and unavoidable localized concentrations of PM_{10}. Unlike the proposed Project, which would have less than significant localized concentrations of NO_2, under the No Project Alternative, operational concentrations of NO_2 would be significant and unavoidable. It is also expected that operational impacts from the No Project Alternative with respect to local effects of the emissions of CO, SO_2, and $PM_{2.5}$ would be greater than those of the proposed Project, and the local effects of these pollutants would still be less than significant.

Because the proposed Project would have a significant and unavoidable cumulative impact with respect to air quality, and because the No Project Alternative would have an equal or greater impact on air quality than the proposed Project, the cumulative impacts from the No Project Alternative on air quality would be ***significant and unavoidable***.

5.5.1.1.2 Human Health Risk

5.5.1.1.2.1 Construction

As discussed in Section 4.1.2, *Human Health Risk*, the modifications and additions to the airfield, terminals, and ground access facilities under the proposed Project would alter the locations and amounts of toxic air contaminants (TAC) released by aircraft, ground support equipment (GSE), vehicles, and stationary sources; however, the incremental impacts to human health from TAC released during construction-related activities of the proposed Project would be less than significant.

The No Project Alternative would not involve construction of the airfield improvements, Concourse 0, or Terminal 9, which are proposed under the Project. In place of the roadway improvements, the No Project Alternative would implement the approved LAMP Phase 2 roadway improvements, construction of which would emit substantially less emissions than would construction of the proposed Project. As with the proposed Project, construction-related impacts to human health from TAC under the No Project Alternative would be ***less than significant***.

5.5.1.1.2.2 Operations

As noted above, the No Project Alternative would not involve construction of the airfield improvements, Concourse 0, or Terminal 9, but would implement the approved LAMP Phase 2 roadway improvements. Traffic emissions under this alternative are anticipated to be comparable to those of the 2028 Without Project scenario presented in Section 4.1.2.5.1.2. The operations-related TAC emissions under the No Project Alternative would be driven by increased aircraft activity (i.e., aircraft taxi times), which would occur irrespective of the Project, and would be virtually indistinguishable to those under the 2028 Without Project scenario. As discussed in Section 4.1.2, *Human Health Risk*, the 2028 Without Project scenario, and consequently the No Project Alternative, would result in ***less than significant*** impacts to human health risk.

5.5.1.1.2.3 Cumulative

As discussed in Section 4.1.2, *Human Health Risk*, no USEPA standards exist that establish acceptable levels of human health risks or that identify a threshold of significance for cumulative health risk impacts. Therefore, a qualitative discussion of cumulative impacts is presented in Section 4.1.2, *Human Health Risk*, but no determination is made regarding the significance of cumulative impacts.

Although no defined thresholds for cumulative health risk impacts are available, it is the policy of the SCAQMD to use the same significance thresholds for cumulative cancer risk impacts as for the project-specific cancer risk impacts analyzed in the EIR. Based on this policy, the proposed Project's

contribution to the cumulative cancer risk would not be cumulatively considerable under the construction and operation scenarios since the incremental cancer risk impacts for both construction and operation for evaluated receptors would be below the individual cancer risk significance thresholds of 10 in one million.

In contrast to cancer risk, the SCAQMD policy does have different significance thresholds for project-specific and cumulative impacts for hazard indices for TAC emissions. A project-specific significance threshold is one (1.0) while the cumulative threshold is 3.0. Based on this SCAQMD policy, chronic and acute non-cancer hazard indices associated with airport emissions for both construction and operation under the proposed Project would not be cumulatively considerable.

The No Project Alternative would not involve construction of the airfield improvements, Concourse 0, or Terminal 9. In place of the proposed roadway improvements, the No Project Alternative would implement the LAMP Phase 2 roadway improvements, construction of which would emit substantially less emissions than would construction of the proposed Project. Traffic emissions under this alternative are anticipated to be comparable to those of the 2028 Without Project scenario presented in Section 4.1.2.5.1.2. The operations-related TAC emissions under the No Project Alternative would be driven by increased aircraft activity (i.e., aircraft taxi times), which would occur irrespective of the Project, and would be virtually indistinguishable to those under the 2028 Without Project scenario. Therefore, as with the proposed Project, the cumulative impacts from the No Project Alternative on human health risk would be ***less than significant***.

5.5.1.2 Cultural Resources (Historical Resources)

5.5.1.2.1 Construction

As discussed in Section 4.2, *Cultural Resources (Historical Resources)*, construction of the proposed Project, specifically Concourse 0, Terminal 9, and/or the landside improvements, would not require demolition or alteration of any of the four properties that have been identified as eligible for historic listing in the near vicinity of the Project site (i.e., the 1961 Airport Traffic Control Tower [ATCT] at the eastern end of the CTA; the former McCulloch Building [now H Hotel/Homewood Suites] at 6151 W. Century Boulevard; the former Union Savings and Loan building at 9800 S. Sepulveda Boulevard; and the former Aircraft School Building at 9700 S. Sepulveda Boulevard). As such, construction of the proposed Project would not cause a substantial adverse change in the significance of a historical resource pursuant to State CEQA Guidelines Section 15064.5 and impacts on historical resources would be less than significant.

Under the No Project Alternative, Concourse 0 and Terminal 9 would not be constructed, and the LAMP Phase 2 roadway improvements, which do not include improvements in close proximity to the Union Savings and Loan Building, and which would include more limited improvements in proximity to the Aircraft School Building, would be constructed in lieu of the landside improvements proposed under the Project. The LAMP Phase 2 roadway improvements would remain within the public right-of-way and would not require demolition or alteration of any historical resources;[10] as with the proposed Project, impacts from construction of the No Project Alternative would be ***less than significant***.

5.5.1.2.2 Operations

The proposed Project would result in alterations to the surroundings of the four historical resources located in the near vicinity of the Project site, as shown in **Table 5-3**. As discussed in Section 4.2, *Cultural Resources (Historical Resources)*, although the proposed Project would introduce new facilities

[10] City of Los Angeles, Los Angeles World Airports, *Final Environmental Impact Report for Los Angeles International Airport (LAX) Landside Access Modernization Program*, (SCH 2015021014), Section 4.4 - Cultural Resources, February 2017. Available: https://www.lawa.org/en/connectinglax/automated-people-mover/documents.

(i.e., Concourse 0, Terminal 9 and its APM station and parking facility, and elevated roadways) that would alter the surroundings of these historic properties, such alterations would not materially impair the buildings such that they can no longer convey their historic significance; therefore, impacts on historical resources associated with proposed Project operations would be less than significant.

Table 5-3
Summary of Alterations to the Surroundings of Historical Resources

Historical Resource	Component			
	Concourse 0	Terminal 9, APM Station, Parking Facility	Proposed Project Landside Improvements	LAMP Phase 2 Roadways
	Proposed Project, Alternatives 2, 4	Proposed Project, Alternatives 3, 4	Proposed Project, Alternatives 2, 3	Alternatives 1, 4
1961 Airport Traffic Control Tower	✓	✓	✓	✓
Union Savings and Loan Building	✓		✓	
Former Aircraft School Building	✓		✓	✓
McCulloch Building		✓	✓	✓

Source: CDM Smith, 2020.

Under the No Project Alternative, the proposed airfield improvements, Concourse 0, Terminal 9, and the Terminal 9 APM station and parking facility would not be constructed. The LAMP Phase 2 roadway system would be constructed in lieu of the landside improvements proposed under the Project. Impacts to historical resources associated with the No Project Alternative are summarized in Table 5-3. Without Concourse 0, Terminal 9, and the Terminal 9 APM station and parking facility, fewer alterations would occur to the immediate surroundings of the 1961 ATCT, the former Aircraft School Building, and the McCulloch Building as compared to the proposed Project and the alterations to the surroundings of the Union Savings and Loan Building would be avoided. The LAMP Phase 2 roadway system would include new roadways surrounding the 1961 ATCT and new roadways immediately to the south and east of the 1964 McCulloch Building, which would alter the surroundings of these historical resources in a manner similar to the proposed Project. The roadway system under the No Project Alternative would also result in minor alterations to the surroundings of the former Aircraft School Building. Operation of the new roadways would not materially impair these historical resources such that they can no longer convey their historic significance. Therefore, as with the proposed Project, impacts from operation of the No Project Alternative on historical resources would be ***less than significant***.

5.5.1.2.3 Cumulative

As discussed in Section 4.2, *Cultural Resources (Historical Resources)*, there are four historical resources located within the near vicinity of the proposed Project. Implementation of the proposed Project would not have any significant cumulative impacts on these historical resources.

The No Project Alternative would not involve construction of the airfield improvements, Concourse 0, or Terminal 9. In place of the proposed roadway improvements, the No Project Alternative would implement the LAMP Phase 2 roadway improvements. The LAMP Phase 2 roadway improvements would not have an adverse effect on historical resources. Because the proposed Project would have a less than significant cumulative impact on historical resources, and because the No Project Alternative would have a lower impact on historical resources than the proposed Project, the cumulative impacts from the No Project Alternative on historical resources would be ***less than significant***.

5.5.1.3 Energy

5.5.1.3.1 Construction

As discussed in Section 4.3, *Energy*, construction of the proposed Project would require relatively minor use of electricity and natural gas. The majority of energy use during construction would consist of diesel and gasoline fuel used to power construction equipment and vehicles; the proposed Project would also result in a temporary increase in Jet A use during the temporary runway closures. The proposed Project's construction activities would comply with federal and state regulations pertaining to energy efficiency, including those related to fuel efficiency. In addition, as discussed in Section 4.3, *Energy*, construction activities would comply with LAWA's Design and Construction Handbook, Sustainable Design and Construction Policy, Sustainable Design and Construction Requirements, and Alternative Fuel Vehicle Requirement Program, and would not interfere with the Los Angeles Department of Water and Power's (LADWP's) work toward meeting the Renewable Portfolio Standard targets. Therefore, construction of the proposed Project would not result in wasteful, inefficient, or unnecessary consumption of energy resources, nor would construction of the proposed Project conflict with or obstruct a state or local plan for renewable energy or energy efficiency. Construction of the proposed Project would result in less than significant impacts on energy resources.

The No Project Alternative would not involve construction of the airfield improvements, Concourse 0, or Terminal 9, which are proposed under the Project. In place of the proposed roadway improvements, the No Project Alternative would implement the LAMP Phase 2 roadway improvements, construction of which would require substantially less energy than would construction of the proposed Project. Construction of the LAMP Phase 2 roadway improvements would comply with applicable plans and policies, including those related to fuel efficiency. Therefore, construction of the No Project Alternative would not result in wasteful, inefficient, or unnecessary consumption of energy resources. As with the proposed Project, the impact of the No Project Alternative on energy resources would be ***less than significant***.

5.5.1.3.2 Operations

As discussed in Section 4.3*, Energy*, operation of the proposed Project would require the use of electricity, natural gas, and mobile source and transportation-related fuels. Electricity and natural gas consumption would result primarily from the operation of Concourse 0 and Terminal 9. Although the proposed Project would increase overall energy use, LAWA's existing sustainability policy and project features would reduce energy use in the form of building energy efficiency improvements and reductions in mobile source and transportation-based fuel consumption. The proposed Project's operational activities would comply with federal, state, and local regulations for energy efficiency. In addition, electricity supplied to the proposed Project would be required to comply with California's Renewable Portfolio Standard. Therefore, operation of the proposed Project would not result in wasteful, inefficient, or unnecessary consumption of energy resources, nor conflict with or obstruct a state or local plan for renewable energy or energy efficiency. Operation of the proposed Project would result in less than significant environmental impacts on energy resources.

Operation of the No Project Alternative would require substantially less electricity and natural gas than the proposed Project, as most of the demand for these resources under the proposed Project would be associated with operation of Concourse 0 and Terminal 9. Consumption of Jet A by aircraft and APUs and consumption of diesel and gasoline by GSE would be similar to the proposed Project, as the level of aircraft activity would be the same under both the No Project Alternative and the proposed Project. Operation of the No Project Alternative would result in less demand for vehicle-related fuels due to the lower level of employment without Concourse 0 and Terminal 9 and the lower number of added lane miles associated with the LAMP Phase 2 roadways as compared to the proposed Project roadway improvements. State and local plans pertaining to fuel efficiency would apply to the No Project Alternative; therefore, the No

Project Alternative would not result in wasteful, inefficient, or unnecessary consumption of energy resources, or conflict with or obstruct a state or local plan for renewable energy or energy efficiency. As with the proposed Project, the No Project Alternative would result in ***less than significant*** impacts on energy resources.

5.5.1.3.3 Cumulative

As discussed in Section 4.3, *Energy*, construction and operation of the proposed Project would consume energy, but would not result in a wasteful or inefficient, or unnecessary consumption of energy resources, nor conflict with or obstruct a state or local plan for renewable energy or energy efficiency. Construction and operation of the proposed Project would result in less than significant cumulative impacts on energy resources.

The No Project Alternative would not involve construction of the airfield improvements, Concourse 0, or Terminal 9. In place of the proposed roadway improvements, the No Project Alternative would implement the LAMP Phase 2 roadway improvements. The No Project Alternative would consume less electricity and natural gas than the proposed Project because there would be no energy used to construct or operate the new facilities. Because the proposed Project would have a less than significant cumulative impact on energy resources, and because the No Project Alternative would have a lower energy demand than that of the proposed Project, the cumulative impacts from the No Project Alternative on energy resources would be ***less than significant***.

5.5.1.4 Greenhouse Gas Emissions

5.5.1.4.1 Construction and Operations

As discussed in Section 4.4, *Greenhouse Gas Emissions*, the proposed Project would result in a net increase in short-term and temporary emissions of GHGs from construction-related activities as well as indirect GHG emissions related to the temporary runway closures. The No Project Alternative would not involve construction of the airfield improvements, Concourse 0, or Terminal 9, but would implement the LAMP Phase 2 roadway improvements. Although construction-related GHG emissions would be substantially less for the No Project Alternative than for the proposed Project, construction of the Phase 2 roadway improvements would still result in a net increase in short-term and temporary emissions of GHGs from construction-related activities.

As discussed in Section 4.4, *Greenhouse Gas Emissions*, the proposed Project would result in a net increase in ongoing regional emissions of GHGs from operational activities. The No Project Alternative would not involve construction or subsequent operation of the airfield improvements, Concourse 0, or Terminal 9, but would implement the LAMP Phase 2 roadway improvements. As compared to the Without Project scenario, GHG emissions associated with the No Project Alternative would be comparable, albeit slightly higher due to the additional lane miles and, consequently, vehicle miles traveled (VMT), associated with the addition of the LAMP Phase 2 roadways. Nevertheless, as with GHG emissions from the Without Project scenario, GHG emissions associated with operation of the No Project Alternative would be less than emissions from the proposed Project (see Table 4.4-6). Although traffic-related GHG emissions are expected to be lower under the No Project Alternative as compared to baseline conditions, aircraft activity dominates overall GHG emissions associated with airport operations, and GHG emissions under the No Project Alternative would still be expected to result in a net increase over baseline conditions.

The amortized construction emissions combined with operational emissions under the No Project Alternative would result in total annual emissions of GHGs that would result in a net increase over baseline conditions. Therefore, as with the proposed Project, impacts of GHG emissions from the No Project Alternative would be ***significant and unavoidable***.

5.5.1.4.2 Cumulative

As discussed in Section 4.4, *Greenhouse Gas Emissions*, GHG impacts are treated exclusively as cumulative impacts; there are no non-cumulative GHG emission impacts from a climate change perspective. As such, the assessment of significance under CEQA is based on a determination of whether the incremental GHG emissions from the proposed Project represent a cumulatively considerable contribution to global climate change impacts. (See State CEQA Guidelines Section 15064.4(b).) As indicated in Section 4.4.5, implementation of the proposed Project would result in a significant and unavoidable impact related to GHG emissions; hence, the proposed Project's incremental contribution of GHG emissions, both before and after mitigation, is considered to be cumulatively considerable.

The No Project Alternative would not involve construction of the airfield improvements, Concourse 0, or Terminal 9. In place of the proposed roadway improvements, the No Project Alternative would implement the LAMP Phase 2 roadway improvements. As discussed in Section 4.4, *Greenhouse Gas Emissions,* GHG impacts under the Without Project scenario (which is very similar to the No Project Alternative) would be slightly less than that under the proposed Project but would still represent a significant increase over baseline GHG emissions at LAX. With implementation of the No Project Alternative, cumulative impacts related to GHG emissions would be significant and, as with the proposed Project, the No Project Alternative would have a ***cumulatively considerable contribution*** to this significant and unavoidable cumulative impact.

5.5.1.5 Hazardous Materials

5.5.1.5.1 Construction

As discussed in Section 4.5, *Hazardous Materials*, the proposed Project would be located on or adjacent to sites which are included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 or other government databases. As shown in **Table 5-4**, construction of the airfield improvements could potentially interfere with future remediation of the Terminal 1 Fuel Valve Vault site, if such remediation is required in the future; construction of Concourse 0 would affect ongoing monitoring and remediation of contamination at the AlliedSignal/Honeywell site and could potentially hinder future remediation activities associated with the per- and poly-fluoroalkyl substances (PFAS) area of interest, if remediation is required to be undertaken; and construction of Terminal 9 would result in removal of up to three groundwater monitoring wells associated with remediation at the adjacent United Airlines (UAL) Maintenance Operations Center (MOC). As described in Section 4.5, *Hazardous Materials,* the effects of the proposed Project on these sites would not result in significant hazards to the public or the environment; therefore, impacts from construction of the proposed Project would be less than significant.

The No Project Alternative would not involve construction of the airfield improvements, Concourse 0, or Terminal 9. As a result, as shown in Table 5-4, this alternative would not interfere with ongoing or future remediation activities that would be otherwise affected by these Project components. However, construction of the LAMP Phase 2 roadways could require closure of one or more of the AlliedSignal/Honeywell groundwater monitoring wells. Closure of the monitoring wells would not have an impact on human health or the environment, because the monitoring wells could be relocated to other areas. As with the proposed Project, construction of the No Project Alternative would result in a ***less than significant impact*** related to hazardous materials.

Table 5-4
Relationship of Proposed Project and Alternatives to Ongoing or Potential Future Remediation Activities

Site with Known Contamination	Component				
	Airfield Improvements	Concourse 0	Terminal 9, APM Station, Parking Facility	Proposed Project Landside Improvements	LAMP Phase 2 Roadways
	Proposed Project, Alternatives 2, 3, 4	Proposed Project, Alternatives 2, 4	Proposed Project, Alternatives 3, 4	Proposed Project, Alternatives 2, 3	Alternatives 1, 4
Terminal 1 Fuel Valve Vault Site[1]	✓				
AlliedSignal/Honeywell Site		✓		✓	✓
United Airlines Maintenance Operations Center			✓		
PFAS Area of Interest[1]		✓			

Source: CDM Smith, 2020.

Note:
[1] Remediation at the site is not currently underway and future remediation plans have not been established.

Key:
PFAS = Per- and poly-fluoroalkyl substance

5.5.1.5.2 Operations

As with the proposed Project, operations under the No Project Alternative would not involve excavation, extraction of groundwater, or any activity that could damage or physically interfere with ongoing or future contamination monitoring or remediation activities. Therefore, as with the proposed Project, operation of this alternative would have ***no impact*** related to hazardous materials.

5.5.1.5.3 Cumulative

As discussed in Section 4.5, *Hazardous Materials*, construction and operation of the proposed Project would not disrupt the ongoing remediation in the vicinity of the Project site; therefore the proposed Project would result in less than significant cumulative environmental impacts on hazardous materials.

The No Project Alternative would not involve construction of the airfield improvements, Concourse 0, or Terminal 9. As a result, as shown in Table 5-4, this alternative would not interfere with ongoing or future remediation activities that would be otherwise affected by these Project components. However, construction of the LAMP Phase 2 roadways could require closure of one or more of the AlliedSignal/Honeywell groundwater monitoring wells. Closure of the monitoring wells would not have an impact on human health or the environment, because the monitoring wells could be relocated to other areas. In addition, the LAMP Phase 2 roadways would not affect the UAL MOC, and therefore would not contribute to a cumulative impact on the UAL MOC remediation program. Therefore, as with the proposed Project, the cumulative impacts from the No Project Alternative on hazardous materials would be ***less than significant impact***.

5.5.1.6 Land Use and Planning

5.5.1.6.1 Construction and Operations

As discussed in Section 4.6, *Land Use and Planning*, construction and operation of the proposed Project would comply with most of the land use plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect, including those in the SCAG 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), the County of Los Angeles Airport Land Use Plan, and the City of Los Angeles General Plan, LAX Specific Plan, Century Boulevard Streetscape Plan, and city zoning. Key Project components – including the proposed roadway improvements and the proposed APM station at Terminal 9 along the future APM system, which would connect with the Metro Crenshaw/LAX Light Rail line – would advance regional and local policies aimed at enhancing mobility options for LAX passengers. However, the proposed Project would not reduce GHG emissions and improve air quality (RTP/SCS Goal 5) or reduce vehicle emissions (LAX Plan Circulation and Access Policy P14). As described in Section 4.4, *Greenhouse Gas Emissions*, emissions from forecasted activity levels associated with future growth at LAX, of which the proposed Project is a part, are accounted for in the Proposed Final 2020-2045 RTP/SCS. Therefore, the Project would be consistent with the RTP/SCS with respect to GHG emissions. Similarly, as discussed in Section 4.6, *Land Use and Planning*, the proposed Project would comply with federal, state, local, and LAX programs, plans, and policies aimed at reducing vehicle emissions, and would also include project features and mitigation measures that would reduce emissions. As a result, the proposed Project would comply with the intent of LAX Plan Circulation and Access Policy P14. For these reasons, the proposed Project would result in less than significant impacts to land use and planning.

Under the No Project Alternative, the proposed airfield and terminal improvements, including Concourse 0, Terminal 9, and the Terminal 9 APM station and parking facility, would not be constructed or operated. The future LAMP Phase 2 roadway system would be constructed in lieu of the landside improvements proposed under the Project. Without construction of the proposed roadway improvements and the proposed APM station, the No Project Alternative would not advance regional and local policies aimed at enhancing mobility options for LAX passengers. However, this would not cause significant environmental impacts due to conflicts with these policies. With respect to the LAMP Phase 2 roadway system specifically, the LAX Landside Access Modernization Program EIR, which evaluated the environmental impacts of the entire program, including the Phase 2 roadway improvements, determined that impacts related to land use and planning would be less than significant.[11] As described in Sections 5.5.1.1.1 and 5.5.1.4 above, GHG and vehicle emissions under this alternative would increase compared to existing baseline conditions, although to a lesser extent than the proposed Project. However, as with the proposed Project, the No Project Alternative would comply with the overall intent of these land use plans. For these reasons, as with the proposed Project, construction and operation of the No Project Alternative would result in ***less than significant*** impacts to land use and planning.

5.5.1.6.2 Cumulative

As discussed in Section 4.6, *Land Use and Planning*, construction and operation of the proposed Project would not be inconsistent with the land use plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect, including those in the SCAG 2020-2045 RTP/SCS, the County of Los Angeles Airport Land Use Plan, and the City of Los Angeles General Plan, LAX Specific Plan, Century Boulevard Streetscape Plan, and city zoning. As discussed in Section 4.6, *Land Use and Planning*,

[11] City of Los Angeles, Los Angeles World Airports, *Final Environmental Impact Report for Los Angeles International Airport (LAX) Landside Access Modernization Program*, (SCH 2015021014), Section 4.8 – Land Use and Planning, February 2017. Available: https://www.lawa.org/en/connectinglax/automated-people-mover/documents.

construction and operation of the proposed Project would result in less than significant cumulative impacts on land use.

The No Project Alternative would not involve construction of the airfield improvements, Concourse 0, or Terminal 9. In place of the proposed roadway improvements, the No Project Alternative would implement the LAMP Phase 2 roadway improvements. The No Project Alternative would not involve construction of new facilities and would not require changes in land use inconsistent with applicable land use policies. Because the proposed Project would have a less than significant cumulative impact on land use, and because the No Project Alternative would have less of an impact on land use than the proposed Project, the cumulative impacts from the No Project Alternative on land use would be ***less than significant***.

5.5.1.7 Noise

5.5.1.7.1 Aircraft Noise

5.5.1.7.1.1 Construction

As discussed in Section 4.7.1, *Aircraft Noise,* construction of the proposed runway exits would require temporary runway closures in 2023 and 2024, approximately 4.5 months in duration in each year. These temporary runway closures would result in the reassignment of departing and arriving aircraft to other runways, which would result in temporary changes in aircraft noise exposure levels in nearby areas. In some areas, aircraft noise levels would decrease during the runway closures, whereas in other areas, aircraft noise levels would increase to 65 dBA (as measured in terms of the Community Noise Equivalent Level, or CNEL) or above. This would be a short-term (i.e., 4.5-month) significant impact.

Under the No Project Alternative, the proposed airfield improvements, including the proposed runway exits, would not be constructed. As a result, this alternative would avoid the short-term significant impact from aircraft noise that would occur under the proposed Project.

5.5.1.7.1.2 Operations

As discussed in Section 4.7.1, *Aircraft Noise,* aircraft operations under the proposed Project would increase the area that would be subject to elevated aircraft noise levels (i.e., higher than 65 dBA CNEL), which would expose additional residences and other noise-sensitive uses to aircraft noise. Expansion of the LAX Sound Insulation Programs, as set forth in Mitigation Measure MM-AN (ATMP)-1, provides the basis for eligible dwellings and non-residential noise-sensitive facilities that are newly exposed to noise levels 65 CNEL or higher to undergo sound attenuation; however, if sound attenuation of individual eligible structures is not in place by the time the aircraft noise levels occurs, aircraft noise impacts could be significant and unavoidable on an interim basis. Also, such sound attenuation would not reduce aircraft noise impacts at outdoor private habitable areas. For these reasons, the proposed Project would result in significant and unavoidable impacts from aircraft noise. Project implementation would not result in a 1.5 dBA increase within the 65 CNEL contour during operations, nor would it result in a significant impact related to classroom disturbance.

As indicated in Section 2.3.1.2 of Chapter 2, *Description of the Proposed Project,* aircraft activity in 2028 would be the same with or without the proposed Project, and the proposed Project would not alter future arrival or departure patterns. Therefore, future aircraft noise impacts under the No Project Alternative would be the same as for the proposed Project (see Figure 4.7.1-7 and Tables 4.7.1-11 and 4.7.1-12 in Section 4.7.1, *Aircraft Noise)*. As with the proposed Project, under the No Project Alternative, impacts associated with aircraft noise would be ***significant and unavoidable***.

5.5.1.7.1.3 Cumulative

As discussed in Section 4.7.1, *Aircraft Noise*, none of the development projects identified in Chapter 3, *Overview of Project Setting,* would have aircraft operations that could contribute to cumulative aircraft noise impacts. Therefore, cumulative impacts from aircraft noise under the proposed Project would be less than significant (i.e., although aircraft noise impacts associated with the proposed Project, alone, would be significant and unavoidable, there are no other projects involving aircraft activity; hence there is no *cumulative* aircraft noise and there would not be a significant cumulative impact). The lack of other projects that contribute to cumulative aircraft noise impacts applies to the No Project Alternative in the same way as the proposed Project. As with the proposed Project, under the No Project Alternative, cumulative impacts associated with aircraft noise would be ***less than significant***.

5.5.1.7.2 Roadway Traffic Noise

5.5.1.7.2.1 Operations

As discussed in Section 4.7.2, *Roadway Traffic Noise*, implementation of the proposed Project would result in increased operational roadway traffic noise in 2028 compared to baseline conditions; however, the projected increases in roadway traffic noise would not exceed the applicable thresholds of significance (i.e., roadway noise impacts would be less than significant). (Construction traffic noise impacts are addressed in Section 5.5.1.7.3 below.)

Under the No Project Alternative, in place of the proposed roadway improvements, the No Project Alternative would implement the already-approved LAMP Phase 2 roadway improvements. For the most part, roadway traffic associated with the LAMP Phase 2 roadways would be located on alignments similar to those of the proposed Project with respect to nearby noise-sensitive receptors. The exception is that, under the No Project Alternative, the extensive roadway improvements north of 98th Street, which would consist of parallel elevated ramps, would not occur. As a result, traffic volumes on roadways in the vicinity of 98th Street would be lower under the No Project Alternative as compared to the proposed Project. The improvements north of 98th Street that would occur under the proposed Project would be located at a slightly greater distance from nearby noise-sensitive receptors, which are on the south side of 98th Street. Nevertheless, due to the higher traffic volumes, it is expected that the proposed Project would have greater impacts to noise-sensitive receptors along 98th Street from roadway noise than would the No Project Alternative. With respect to other roadways, essentially the same amount of traffic would move through the area roadways under the No Project Alternative as that for the proposed Project. For these reasons, the roadway traffic noise levels on the local roadway network projected for 2028 and the associated increases in roadway traffic noise compared to baseline conditions would not be materially different between the No Project Alternative and the proposed Project. As with the proposed Project, impacts under the No Project Alternative would be ***less than significant***.

5.5.1.7.2.2 Cumulative

As discussed above, the No Project Alternative would have a materially similar impact on roadway traffic noise as the proposed Project. As discussed in Section 4.7.2, *Roadway Traffic Noise*, the proposed Project would have a less than significant cumulative impact on roadway traffic noise. Because the proposed Project would have a less than significant cumulative impact on roadway traffic noise, and because the No Project Alternative would have a similar impact on roadway traffic noise as the proposed Project, the cumulative impacts from the No Project Alternative on roadway traffic noise would be ***less than significant***.

5.5.1.7.3 Construction Traffic and Equipment Noise and Vibration

5.5.1.7.3.1 Construction

As discussed in Section 4.7.3, *Construction Traffic and Equipment Noise and Vibration*, construction of the proposed Project would generate noise; however, construction activities would not cause existing ambient noise levels measured at the property line of noise-sensitive uses to increase by 3 dBA or more in CNEL nor cause excessive ground-borne vibration. As shown in **Table 5-5**, construction activities would exceed existing ambient exterior noise levels by 5 dBA or more at noise-sensitive uses near the proposed Project; however, with implementation of Mitigation Measures MM-N (ATMP)-1, Construction Noise Control Plans, MM-N (ATMP)-2, Construction Scheduling, and MM-N (ATMP)-3, Construction Equipment, this impact would be reduced to a level that is less than significant. (Operational roadway noise impacts are addressed in Section 5.5.1.7.2 above.)

The No Project Alternative would not involve construction of the airfield improvements, Concourse 0, Terminal 9, or the conveyance improvements associated with Terminal 9, which are proposed under the Project. In place of the proposed roadway improvements, the No Project Alternative would implement the previously-approved LAMP Phase 2 roadway improvements. Because the No Project Alternative would have less construction than the proposed Project, there would be fewer peak daily construction trips, and construction traffic noise would be reduced as compared to the proposed Project. As with the proposed Project, impacts related to construction traffic noise would be less than significant. Construction activities associated with the LAMP Phase 2 roadways would be located in proximity to the same historical resources as the proposed Project. In particular, construction activities would generally be the same distance from the most noise-sensitive use, the former Aircraft School Building, as the proposed Project. As with the proposed Project, impacts to this building, and to the other historical resources, from construction equipment vibration would be ***less than significant***.

Table 5-5
Comparison of Construction Noise Impacts Associated with the Proposed Project and Alternatives

ID	Receptor	Construction Activity	Would the Project/Alternative Have a Significant Impact[1] from Construction Noise?				
			Proposed Project	Alternative 1	Alternative 2	Alternative 3	Alternative 4
R1	Residential development in Playa del Rey	Airfield improvements	No	NA	No	No	No
R2	Saint Bernard High School	Airfield improvements	No	NA	No	No	No
R3	Residential development along southern edge of Westchester	Airfield improvements	No	NA	No	No	No
R4	Park West Apartments on Lincoln Boulevard	Airfield improvements	No	NA	No	No	No
R5	Residential uses along West 88th Street near Liberator Ave	Airfield improvements	No	NA	No	No	No
R6	Residential uses near Westchester Parkway and Kittyhawk Ave	Airfield improvements	No	NA	No	No	No
		Terminal construction	No	NA	No	No	No
		Roadway construction	No	No	No	No	No
		Combined construction noise	No	NA	No	No	No
R7	Residence Inn by Marriott Los Angeles LAX/Century Boulevard	Terminal construction	No	NA	No	No	No
		Roadway construction	No	No	No	No	No
		Combined construction noise	Yes	NA	No	Yes	Yes
R8	Sheraton Gateway Los Angeles Hotel	Terminal construction	Yes	NA	No	Yes	Yes
		Roadway construction	Yes	Yes	Yes	Yes	Yes
		Combined construction noise	Yes	NA	Yes	Yes	Yes
R9	H Hotel Los Angeles/ Homewood Suites by Hilton Los Angeles International Airport	Terminal construction	Yes	NA	No	Yes	Yes
		Roadway construction	Yes	Yes	Yes	Yes	Yes
		Combined construction noise	Yes	NA	Yes	Yes	Yes

Table 5-5
Comparison of Construction Noise Impacts Associated with the Proposed Project and Alternatives

ID	Receptor	Construction Activity	Would the Project/Alternative Have a Significant Impact[1] from Construction Noise?				
			Proposed Project	Alternative 1	Alternative 2	Alternative 3	Alternative 4
R10	Hyatt Regency Los Angeles International Airport	Terminal construction	Yes	NA	Yes	No	Yes
		Roadway construction	Yes	Yes	Yes	Yes	Yes
		Combined construction noise	Yes	NA	Yes	Yes	Yes
R11	Courtyard Los Angeles LAX/Century Boulevard	Terminal construction	Yes	NA	No	Yes	Yes
		Roadway construction	Yes	No	Yes	Yes	No
		Combined construction noise	Yes	NA	Yes	Yes	Yes

Source: HMMH, CDM Smith, 2020.

Notes:

[1] Construction equipment noise levels conservatively assume all equipment would be utilized at the same time and at all hours of the 24-hour day, both of which are unlikely.

As with the proposed Project, construction of the LAMP Phase 2 roadway improvements under the No Project Alternative would generate noise from construction equipment. The potential noise impacts from this construction activity on the nearest noise-sensitive receptors are shown in **Table 5-6**. As explained in Section 4.7.3, *Construction Traffic and Equipment Noise and Vibration*, the analysis is very conservative, and assumes that all construction equipment would be utilized at the same time, which is unlikely, and that construction activity might occur on a continuous basis over the course of an entire (24-hour) day, which is also unlikely. In fact, actual construction activities would occur on a more limited, partial-day construction schedule; would occur more intermittently; and would not coincide with other construction activities. In addition, the construction-related noise levels presented in Table 5-6 do not account for noise reduction/attenuation from any intervening structures. Hence, the actual construction-related noise levels would be lower than shown in Table 5-6. Under the No Project Alternative, the airfield improvements, Terminal 9, Concourse 0, and the conveyance improvements associated with Terminal 9 would not be constructed. Moreover, instead of constructing the roadway improvements proposed under the proposed Project, the No Project Alternative would implement the LAMP Phase 2 roadways, which do not include improvements on 98th Street. As a result, as shown in Table 5-5 and Table 5-6, the No Project Alternative would avoid significant impacts associated with the proposed Project at two Receptor Sites (R7 Residence Inn by Marriott and R11 Courtyard Los Angeles LAX/Century Boulevard), and reduce, but not avoid, significant impacts associated with the proposed Project at additional three Receptor Sites (R8 Sheraton Gateway Hotel, R9 H Hotel/Homewood Suites, and R10 Hyatt Regency LAX). Nevertheless, as shown in Table 5-6, implementation of the No Project Alternative would result in construction noise levels above the threshold of significance at several noise-sensitive receptors. The cause of those noise impacts is construction of the LAMP Phase 2 roadway improvements; however, the LAMP Phase 2 roadway improvements were already approved with accompanying mitigation measures that would reduce the impacts to a less than significant level. As such, the construction traffic and equipment noise and vibration impacts under the No Project Alternative would, with application of existing mitigation requirements for LAMP Phase 2 roadway improvements, be ***less than significant***.

Construction of the No Project Alternative improvements could use any of the staging areas that would be used for the proposed Project. Therefore, noise associated with the use of staging areas for the No Project Alternative would be the same as the proposed Project (see Table 4.7.3-6). As with the proposed Project, impacts would ***be less than significant***.

5.5.1.7.3.2 Cumulative

As discussed above, the No Project Alternative would have a lower impact on construction traffic and equipment noise and vibration than the proposed Project. As discussed in Section 4.7.3, *Construction Traffic and Equipment Noise and Vibration*, the proposed Project would have a less than significant cumulative impact on construction traffic and equipment noise and vibration. Because the proposed Project would have a less than significant cumulative impact on construction traffic and equipment noise and vibration, and because the No Project Alternative would have a lower impact on construction traffic and equipment noise and vibration than the proposed Project, the cumulative impacts from the No Project Alternative on construction traffic and equipment noise and vibration would be ***less than significant***.

Table 5-6
Construction Noise Levels at Noise-Sensitive Receptor Sites - Alternative 1

ID	Receptor	Background Conditions[1] CNEL (dBA)	Distance from Construction Activity (feet)	Construction Activity	Construction Equipment CNEL (dBA)	Total[2] CNEL (dBA)	Significance Threshold[3]	Above Threshold?
R6	Residential uses near Westchester Parkway and Kittyhawk Ave	72.0	1,600	Roadway construction	66.9	73.2	77.0	No
R7	Residence Inn by Marriott Los Angeles LAX/Century Boulevard	70.2	900	Roadway construction	71.9	74.1	75.2	No
R8	Sheraton Gateway Los Angeles Hotel	69.3	100	Roadway construction	91.0	91.0	74.3	Yes[4]
R9	H Hotel Los Angeles/ Homewood Suites by Hilton Los Angeles International Airport	70.4	55	Roadway construction	96.2	96.2	75.4	Yes[4]
R10	Hyatt Regency Los Angeles International Airport	73.4	150	Roadway construction	87.5	87.7	78.4	Yes[4]
R11	Courtyard Los Angeles LAX/Century Boulevard	71.7	350	Roadway construction	73	75.4	76.0	No

Source: HMMH, CDM Smith, 2020.

Notes:

1 Background condition obtained through AEDT using 24-hour CNEL dBA.

2 Background plus Alternative 1 construction noise.

3 Significance Threshold = Background CNEL + 5 dBA

4 Construction equipment noise levels conservatively assume all equipment would be utilized at the same time and at all hours of the 24-hour day, both of which are unlikely.

5.5.1.8 Transportation

5.5.1.8.1 Plans, Programs, Ordinances, and Policies Analysis

Consistent with the methodology used in Section 4.8.5.1.1 for the proposed Project, a review was conducted to determine whether the No Project Alternative would conflict with a transportation-related City or regional plan, program, ordinance, or policy addressing the circulation system (including transit, roadways, bicycle, and pedestrian facilities) that was adopted to protect the environment. Transportation policies or standards adopted to protect the environment include those that support multimodal transportation options and a reduction in VMT.

Although the No Project Alternative does not include development of Concourse 0 or Terminal 9, which is a notable difference from the proposed Project, the roadway system proposed under the No Project Alternative is generally similar to that of the proposed Project and would still serve LAX overall. The relationship of the No Project Alternative to plans programs, ordinances, and policies pertaining to transportation would be generally similar to that of the proposed Project, as addressed earlier in Table 4.8-11 and Table 4.8-12. Those similarities include, but are not limited to, the relationship to the adopted SCAG 2020-2045 RTP/SCS. The 2020-2045 RTP/SCS recognizes the LAX Landside Access Modernization Program as providing for ground transportation system improvements at LAX, and the RTP/SCS also recognizes the proposed Project as providing for ground transportation system improvements. While LAX Landside Access Modernization Program Phase 1 roadway improvements are included in the RTP/SCS, the Phase 2 roadway improvements, which are a key element of the No Project Alternative, are not included in the RTP/SCS, but could be added at a future time. That is also the case for the roadway improvements associated with the proposed Project. Overall, the No Project Alternative would not be inconsistent with transportation-related plans, policies, ordinances, and programs, and, as with the proposed Project, the impact of the No Project Alternative would be ***less than significant***.

5.5.1.8.2 VMT Analysis

The No Project Alternative was analyzed by modifying the LAX Travel Demand Model (that was developed and calibrated for the proposed Project) to account for all the transportation elements of the No Project Alternative, including LAX Landside Access Modernization Program Phase 2 roadway improvements. The methodology to calculate VMT impacts is consistent with the methodology described in Section 4.8.2 for the proposed Project VMT analysis. The travel demand model is used to calculate VMT per employee, total passenger VMT and induced VMT. However, the No Project Alternative does not include any new employees. Therefore, employee VMT was not assessed for this alternative. The results of the passenger VMT analysis are presented in **Table 5-7**.

Table 5-7
Alternative 1 Passenger VMT

Measure	Projected Future Conditions Baseline	Proposed Project	Alternative 1
Total Passenger VMT	8,676,209	8,708,995	8,696,606
Source: Fehr and Peers, 2020.			

The No Project Alternative would result in a net increase of 20,397 total passenger VMT over the 2028 Projected Future Conditions Baseline, as compared to a net increase of 32,786 under the proposed Project. Relative to the percent increase over baseline conditions, the No Project Alternative would result in a VMT increase of 0.23 percent compared to a 0.37 percent increase associated with the proposed Project The magnitude of the VMT change under the No Project Alternative would be less than proposed Project because the new roadways under LAX Landside Access Modernization Program Phase 2 are

shorter (approximately 4.9 lane miles versus 5.8 lane miles). In addition, maintaining the Park 'N Fly parking lot in its current location would help to slightly reduce VMT relative to the proposed Project. Under the No Project Alternative, passengers would walk to the CTA from Park 'N Fly, whereas under the proposed Project, these passengers are allocated to the other parking facilities and would take a shuttle to ITF West and use APM to access the CTA. As was the case for the proposed Project (described in Section 4.8.5.2.1), this net increase in passenger VMT would result in a significant impact. Even with implementation of the mitigation package for the proposed Project described in Section 4.8.5.2.2, as with the proposed Project, the passenger VMT impact associated with the No Project Alternative would remain ***significant and unavoidable***.

The LAX Landside Access Modernization Program Phase 2 roadway improvements and proposed Project new roadways are expected to have the same effect on induced VMT (with minimal variation), because the level of non-airport trip activities would be the same. Therefore, the short-term induced VMT impacts of the No Project Alternative would be consistent with those of the proposed Project, as described in Section 4.8.5.4, which also notes that there are no feasible mitigation measures for induced VMT impacts. As such, as with the proposed Project, implementation of the No Project Alternative would result in a ***significant and unavoidable*** impact relative to induced VMT.

5.5.1.8.3 Hazard Analysis

Impacts regarding the potential increase of hazards due to a geometric design feature generally relate to the design of access points to and from [a] project site, and may include safety, operational, or capacity impacts. Impacts can be related to vehicle/vehicle, vehicle/bicycle, or vehicle/pedestrian conflicts, as well as to operational delays caused by vehicles slowing and/or queuing to access a project site. In the case of the No Project Alternative, these conflicts may be created by ramp configurations or through the placement of ramps, loading areas, or intersections in areas of inadequate visibility, adjacent to bicycle or pedestrian facilities, or too close to busy or congested intersections. These impacts were evaluated for permanent conditions after Project completion.

This analysis focused upon locations where the new roadways introduce a new vehicle access point and/or driveways to the site. The following four locations that would access the Project site from the public right-of-way and that may be affected by the No Project Alternative driveways and infrastructure are:

- Century Boulevard and Jetway Boulevard
- Sepulveda Boulevard and 96th Street
- Sepulveda Boulevard and Century Boulevard
- Sepulveda Boulevard south of World Way

Based on the proposed infrastructure, level of existing activity, and anticipated level of activity attributable to the proposed Project, the proposed Project would not substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) and would comply with City design standards. Moreover, the land uses associated with the No Project Alternative (i.e., roadway improvements) would not be incompatible with existing land uses in the Project area, which consist of airport and commercial uses. For these reasons, the impact would be ***less than significant*.**

Freeway Safety Analysis

The LADOT interim guidance for freeway safety analysis applied to the proposed Project, described in Section 4.8.5.5.1, was also used to assess freeway safety impacts relative to the No Project Alternative. The No Project Alternative would have very similar passenger levels of activity and a lower number of total employees relative to the proposed Project; therefore, the No Project Alternative would generate less trips on a daily basis than the proposed Project. As a result, it is anticipated that the vehicle trips on freeway off-ramps would be less than the proposed Project. Therefore, as with the proposed Project, the

No Project Alternative would not have a substantial effect at the analyzed location or have a negative effect on traffic safety.

Overall, as with the proposed Project, implementation of the No Project Alternative would have a ***less than significant*** *impact* relative to hazards.

5.5.1.8.4 Cumulative Impacts

Cumulative Impacts Associated with Plans, Programs, Ordinances, and Policies

The cumulative impacts of the No Project Alternative related to plan consistency would be consistent with those of the proposed Project, as described in Section 4.8.6.1, which would be ***less than significant.***

Cumulative Impacts Associated with VMT

Operation of the No Project Alternative would not generate any new employees; therefore, there would not be any cumulative impacts associated with employee VMT.

For passenger VMT, the 2028 Projected Future Conditions Baseline includes all the passenger activity projected to occur at that time. As such, there would be no significant cumulative passenger VMT impacts beyond what is already accounted for in the baseline. Relative to probable future passenger growth that would occur subsequent to 2028, the nature and level of increased VMT would generally be in proportion to the impact identified for the No Project Alternative. The increase in passenger VMT associated with the No Project Alternative, as compared to passenger VMT in the 2028 Projected Future Conditions Baseline, is primarily attributable to the approximately 4.9 additional lane miles that would occur with the LAX Landside Access Modernization Program Phase 2 roadway system improvements. As future passenger levels increase beyond 2028, the total passenger VMT would also increase from the additional passengers on that roadway system. The increase in total passenger VMT would be generally proportional to the increase in MAP, assuming the mode splits (i.e., percentages of passengers driving their own vehicles, taking TNCs, taking shuttles, using rental cars, taking transit, etc.) and mode assignments (i.e., percentages of vehicles going to/from the CTA, or the ITFs, or the CONRAC, etc.) would not change substantially from 2028 conditions. As such, there would be no cumulative passenger VMT impact in 2028 beyond what is already identified for that year, but total passenger VMT would increase in subsequent years. Based on the threshold of significance for passenger VMT being no net increase over Projected Future Conditions Baseline, that increase would represent a significant cumulative impact for passenger VMT. As described in Section 4.8.5.3, the same VMT reduction strategies are proposed as mitigation, but would not reduce the impact to less than significant. Therefore, the cumulative impact would be ***significant and unavoidable***, as would also be the case for the proposed Project.

The LAX Landside Access Modernization Program Phase 2 roadway improvements and proposed Project new roadways are expected to have the same effect on induced VMT (with minimal variation), because the level of non-airport trip activities would be the same. Therefore, cumulative long-term induced VMT impacts of the No Project Alternative would be consistent with those of the proposed Project as described in Section 4.8.6.2, and would be ***significant and unavoidable*** under both scenarios.

Overall, it is anticipated that there would be significant cumulative impacts related to VMT and that the No Project Alternative would have a ***cumulatively considerable contribution*** to that impact, which would also be the case for the proposed Project.

Cumulative Impacts Associated with Hazards

The cumulative impacts of the No Project Alternative related to hazards would be consistent with those of the proposed Project as described in Section 4.8.6.3. Such impacts would be ***less than significant*** for both the No Project Alternative and the proposed Project.

5.5.1.9 Utilities

5.5.1.9.1 Water Supply

5.5.1.9.1.1 Construction

As discussed in Section 4.9.1, *Water Supply*, construction of the proposed Project would not require or result in the relocation or construction of new or expanded water facilities that could result in a significant environmental impact. New conveyance infrastructure, consisting of upsized delivery pipelines or addition of new, localized pipelines, would be required to supply water to Terminal 9. As these conveyance improvements would be located in areas that would already be undergoing construction, their implementation would not result in any new environmental impacts. Moreover, water use during construction would not exceed regional water supply, as construction would use less water than Project operations for which there is available water supply (see the approved Water Supply Assessment (WSA) in **Appendix H**). The proposed Project would result in less than significant impacts from construction on water supply and infrastructure.

The No Project Alternative would not involve construction of the airfield improvements, Concourse 0, Terminal 9, or the conveyance improvements associated with Terminal 9, which are proposed under the Project. In place of the proposed roadway improvements, the No Project Alternative would implement the LAMP Phase 2 roadway improvements, construction of which would require substantially less water than would construction of the proposed Project. Because sufficient water supplies would be available, as with the proposed Project, impacts of No Project Alternative construction on water supply and infrastructure would be ***less than significant***.

5.5.1.9.1.2 Operations

As discussed in Section 4.9.1, *Water Supply*, operation of the proposed Project would not require or result in the relocation or construction of new or expanded water facilities that could result in a significant environmental impact, and Project-related water demand would not exceed regional water supply, as indicated by LADWP in the approved WSA (see **Appendix H**). The impacts of proposed Project operations on water supply and infrastructure would be less than significant.

Operation of the No Project Alternative would not require water for landscaping, cooling towers, or operations and maintenance (e.g., cleaning) of Concourse 0 and Terminal 9. In addition, the No Project Alternative would not require water for new operational employees. Water demand associated with increased passenger activity under the No Project Alternative would be the same as under the proposed Project. Because a large portion of the future water demand would be associated with increased passenger activity, water demand under the No Project Alternative would only be marginally lower than under the proposed Project. Since sufficient water supplies would be available, as with the proposed Project, impacts of No Project Alternative operations on water supply and infrastructure would be ***less than significant***.

5.5.1.9.1.3 Cumulative

As discussed in Section 4.9.1, *Water Supply*, LADWP's WSA for the proposed Project evaluates the water demand of the proposed Project cumulatively with other known projects in LADWP's service area, using long-term demographic projections for population, housing, and employment from the 2015 Urban Water Management Plan (UWMP). Additionally, the water supply planning requirements of SB 610 provide an additional means of confirming that the cumulative future water demands of individual development projects can be met by planned water supplies. Therefore, the evaluation conducted by LADWP for the proposed Project WSA, along with the applicability of SB 610 to other development projects proposed within LADWP's service area, are inherently cumulative in nature. In the approved WSA for the proposed

Project (provided in **Appendix H**), LADWP concludes that the proposed Project's water demand can be accommodated based on the water demand projections in the 2015 UWMP when considered cumulatively with other projects within the LADWP service area. Moreover, SB 610 applies to other development projects proposed within LADWP's service area that may not be accounted for in the 2015 UWMP. Based on the findings of the WSA that the proposed Project's water demand can be accommodated, in conjunction with similar analyses for projects not accounted for in the 2015 UWMP, there will be an adequate regional water supply. Therefore, the proposed Project would result in less than significant cumulative environmental impacts on water supply.

The No Project Alternative would not involve construction of the airfield improvements, Concourse 0, or Terminal 9. In place of the proposed roadway improvements, the No Project Alternative would implement the LAMP Phase 2 roadway improvements, construction of which would require substantially less water than would construction of the proposed Project. Operation of the No Project Alternative would have a lower water demand than that under the proposed Project because the No Project Alternative would not require water for operating the new facilities; however, water demand under the No Project would still increase compared to existing conditions as a result of increased passenger activity. Because the proposed Project would have a less than significant cumulative impact on water supply, and because the No Project Alternative would have a lower demand than that of the proposed Project, the cumulative impacts from the No Project Alternative on water supply would be ***less than significant***.

5.5.1.9.2 Wastewater Generation

5.5.1.9.2.1 Construction

As discussed in Section 4.9.2, *Wastewater Generation*, construction of the proposed Project would not require or result in the relocation or construction of new or expanded wastewater treatment facilities that could cause significant environmental effects, as there is adequate capacity at LADWP water reclamation plants to accommodate construction-related wastewater. New conveyance infrastructure, consisting of upsized collector pipelines or addition of a new, localized pipeline, would be required to provide service connections for Concourse 0. As these conveyance improvements would be located in areas that would already be undergoing construction, their implementation would not result in any new environmental impacts. Overall, the proposed Project would result in less than significant impacts from construction on wastewater conveyance and treatment capacity.

Under the No Project Alternative, the airfield improvements, Concourse 0, and Terminal 9 and its associated facilities would not be constructed and the conveyance improvements associated with Concourse 0 would not be required. The LAMP Phase 2 roadway system would be constructed in lieu of the landside improvements proposed under the Project. Construction of the LAMP Phase 2 roadway improvements would generate substantially less wastewater than would construction of the proposed Project. As with the proposed Project, construction of the No Project Alternative would result in ***less than significant*** impacts on wastewater conveyance and treatment capacity.

5.5.1.9.2.2 Operations

As discussed in Section 4.9.2, *Wastewater Generation*, operation of the proposed Project would not require or result in the relocation or construction of new or expanded wastewater treatment facilities, which could cause significant environmental effects, as there would be adequate existing treatment capacity at the Hyperion Water Reclamation Plant (HWRP) to accommodate operational wastewater flows. The proposed Project would result in less than significant impacts from operations on wastewater conveyance and treatment capacity.

Operation of the No Project Alternative would not result in wastewater generation by new operational employees; however, wastewater generation associated with increased passenger activity under the No

Project Alternative would be the same as under the proposed Project. Because the majority of future wastewater generation would be associated with increased passenger activity, wastewater generation under the No Project Alternative would only be marginally lower than under the proposed Project. Since sufficient wastewater treatment capacity would be available, as with the proposed Project, operation of the No Project Alternative would result in ***less than significant*** impacts on wastewater conveyance and treatment capacity.

5.5.1.9.2.3 Cumulative

As discussed in Section 4.9.2, *Wastewater*, The City of Los Angeles' projection of future wastewater generation within the Hyperion Service Area, including at HWRP and the Donald C. Tillman Water Reclamation Plant (DCTWRP), is cumulative in nature and takes into account projected population increases, as well as future commercial and industrial activity within the City and contract agencies. The projections are based in part on LADWP's 2015 UWMP in conjunction with census data prepared by SCAG, and account for projected economic activity, weather, and water conservation activities. Together, wastewater from the proposed Project (approximately 0.03 mgd) and the cumulative projects at or adjacent to LAX (approximately 0.425 mgd), would generate approximately 0.455 mgd of wastewater, which would not cause HWRP to exceed its treatment capacity. Therefore, cumulative projects would not require or result in the relocation or construction of new or expanded wastewater treatment facilities, and the proposed Project would result in less than significant cumulative environmental impacts on wastewater.

The No Project Alternative would not involve construction of the airfield improvements, Concourse 0, or Terminal 9. In place of the proposed roadway improvements, the No Project Alternative would implement the LAMP Phase 2 roadway improvements, construction of which would generate substantially less wastewater than would construction of the proposed Project. Operation of the No Project Alternative would generate less wastewater than the proposed Project because the No Project Alternative would not generate wastewater from operating the new facilities; however, wastewater generation under the No Project would still increase compared to existing conditions as a result of increased passenger activity. Because the proposed Project would have a less than significant cumulative impact on wastewater, and because the No Project Alternative would generate less wastewater than the proposed Project, the cumulative impacts from the No Project Alternative on wastewater would be ***less than significant***.

5.5.2 Alternative 2: Concourse 0 Only

5.5.2.1 Air Quality and Human Health Risk

5.5.2.1.1 Air Quality

5.5.2.1.1.1 Construction

Emissions

Alternative 2 would include the construction of all proposed Project components except for Terminal 9 and its associated facilities. As discussed in Section 4.1.1, *Air Quality*, temporary runway closures during construction of the proposed Project would result in short-term significant and unavoidable construction-related indirect emissions of CO, VOC, NO_X, and SO_X. Construction activities associated with the proposed Project would also result in significant and unavoidable direct emissions of NO_X that would occur in four of the years during the construction period. The short-term impacts caused by temporary runway closures would occur under both the proposed Project and Alternative 2. With respect to impacts from ongoing construction activities, because Alternative 2 would omit the construction of Terminal 9 and its associated facilities, it would have reduced emissions of CO, VOC, NO_X, SO_X, PM_{10}, and $PM_{2.5}$ related to

ongoing construction activities as compared to the proposed Project. The direct construction NO_X emissions would exceed the construction daily significance threshold for two of the years during the construction period. The same mitigation measures would apply as those recommended for the proposed Project. Nevertheless, construction-related impacts with respect to regional emissions of CO, VOC, NO_X, and SO_X under Alternative 2 would still be ***significant and unavoidable***.

Concentrations

The proposed Project would result in a less than significant impact with respect to localized concentrations of CO, NO_2, SO_2, PM_{10}, and $PM_{2.5}$ during construction. Because Alternative 2 would omit the construction of Terminal 9 and its associated facilities, concentrations of criteria air pollutants would be expected to be less than the proposed Project. Construction concentration impacts are driven by the roadway improvements, which are situated in closest proximity to off-site receptors. Because Alternative 2 would include construction of the majority of the roadway improvements proposed as part of the Project, construction concentrations associated with Alternative 2 would be similar to the proposed Project. As with the proposed Project, it is expected that construction-related concentrations of CO, NO_2, SO_2, PM_{10}, and $PM_{2.5}$ under Alternative 2 would be ***less than significant***.

5.5.2.1.1.2 Operations

Emissions

Alternative 2 would include all proposed Project components except for Terminal 9 and its associated facilities, including the Terminal 9 parking facility and APM station. As discussed in Section 4.1.1, *Air Quality*, operation of the proposed Project would result in significant and unavoidable regional emissions of NO_X, SO_X, PM_{10}, and $PM_{2.5}$. These operations-related emissions would be driven by increased aircraft activity that would occur irrespective of the Project. Thus, as with the proposed Project, it is expected that operations-related impacts with respect to regional emissions of NO_X, SO_X, PM_{10}, and $PM_{2.5}$ under Alternative 2 would be ***significant and unavoidable***.

Concentrations

The proposed Project would result in significant and unavoidable localized concentrations of PM_{10}. As discussed in Section 4.1.1, *Air Quality*, localized concentrations of PM_{10} would be driven by road dust from traffic and would occur within the ITF West facility and along the roadways leading to that facility, along 98th Street and Aviation Boulevard at the entrance to the CONRAC under both the proposed Project and Without Project scenarios, and at the location of the new CTA entry roadway under the proposed Project. It is expected that, under Alternative 2, traffic that would otherwise use the Terminal 9 parking facility under the proposed Project would be redirected to other parking areas, including at the ITF West and the CONRAC. Therefore, it is expected that the operations-related local concentrations of PM_{10} would be greater under Alternative 2 than under the proposed Project; impacts under both would be ***significant and unavoidable***.

Under both the proposed Project and Alternative 2, local concentrations of NO_2 would be driven by aircraft activity. Although Alternative 2 would include the airfield improvements proposed under the Project, the omission of Terminal 9 would result in an increase in aircraft taxi time estimated to be 8.5 percent under Alternative 2 as compared to the proposed Project, as shown in **Table 5-8**. Although operation of the proposed Project would result in a less than significant impact with respect to local concentrations of NO_2, it is expected that the increased aircraft taxi times under Alternative 2 would result in a ***new significant and unavoidable impact*** with respect to local concentrations of NO_2.

Table 5-8
Total Taxi Idle Times - Proposed Project Compared to Alternative 2

Total Taxi Time, min/LTO		Change in Taxi Time Relative to Proposed Project	
2028 Proposed Project	2028 Alternative 2	min/LTO	Percent
36.40	39.48	3.09	8.5%

Prepared by: CDM Smith, August 2020.

Key:
min/LTO = minutes per landing and takeoff

As shown in Table 4.1.1-14, localized concentrations of CO, SO_2, and $PM_{2.5}$ associated with the proposed Project would be less than significant when compared to baseline conditions. Localized concentrations of CO, and SO_2 are driven by emissions from aircraft operations, which would be higher under Alternative 2 as compared to the proposed Project. Despite the increase in emissions, an 8.5 percent increase in taxi idle times under Alternative 2 would not result in localized concentrations of these pollutants that would approach the respective thresholds of significance. Localized concentrations of $PM_{2.5}$ are driven by vehicle traffic, which would be higher at peak locations under Alternative 2 as compared to the proposed Project, but would also not result in localized concentrations that would approach the $PM_{2.5}$ threshold. Therefore, as with the proposed Project, it is expected that operational impacts from Alternative 2 with respect to local effects of the emissions of CO, SO_2, and $PM_{2.5}$ would be ***less than significant***.

5.5.2.1.1.3 Cumulative

Alternative 2 would include the construction and operation of all proposed Project components except for Terminal 9, the Terminal 9 parking facility, and Terminal 9 APM station. As discussed above, construction of Alternative 2 would have a slightly lower impact on air quality than the proposed Project, while operations under Alternative 2 would have an equal or greater impact on air quality than the proposed Project. As discussed in Section 4.1.1, *Air Quality*, the proposed Project, in conjunction with other cumulative projects, would have a cumulatively significant and unavoidable impact on air quality, and the proposed Project's contribution to that impact would be cumulatively considerable. Because the proposed Project would have a significant and unavoidable cumulative impact on air quality, and because Alternative 2 would have an equal or greater impact on air quality than the proposed Project, the cumulative impacts from Alternative 2 on air quality would be ***significant and unavoidable*** and the contribution of Alternative 2 would be ***cumulatively considerable***.

5.5.2.1.2 Human Health Risk

5.5.2.1.2.1 Construction

Alternative 2 would include the construction of all proposed Project components except for Terminal 9, the Terminal 9 parking facility, and Terminal 9 APM station. Because Alternative 2 would omit the construction of Terminal 9 and its associated facilities, there would be less construction than the proposed Project, with a related reduction in the concentrations of TAC under Alternative 2 as compared to the proposed Project. As with the proposed Project, construction-related impacts to human health from TAC under Alternative 2 would be ***less than significant***.

5.5.2.1.2.2 Operations

Operations-related emissions would be driven by increased aircraft activity, which would occur irrespective of the Project. Although Alternative 2 would include the airfield improvements proposed under the Project, the omission of Terminal 9 would result in an increase in aircraft taxi time, consequently resulting in an increase in emissions of TAC as compared to the proposed Project from additional fuel

burn. Even though TAC emissions would be slightly higher, as with the proposed Project, operations-related impacts to human health risk associated with Alternative 2 would be ***less than significant***. (Note that Section 4.1.2.5.1.2 presents the impacts of the 2028 Without Project scenario. This scenario does not include the airfield improvements that would occur under both the proposed Project and Alternative 2. Aircraft taxi times under the 2028 Without Project scenario would be even higher than under Alternative 2, and would thus result in higher emissions of TAC from additional fuel burn. Operational emissions of TAC from aircraft under Alternative 2 would be lower than under the 2028 Without Project scenario and higher than the proposed Project).

5.5.2.1.2.3 Cumulative

Alternative 2 would include the construction and operation of all proposed Project components except for Terminal 9, the Terminal 9 parking facility, and Terminal 9 APM station. Because Alternative 2 would omit Terminal 9 and its associated facilities, there would be a lower concentration of TAC from construction and operation compared to the proposed Project. As discussed in Section 4.1.2, *Human Health Risk*, cumulative impacts associated with the proposed Project would be less than significant impact. Therefore, as with the proposed Project, the cumulative impacts from Alternative 2 on human health risk would be ***less than significant***.

5.5.2.2 Cultural Resources (Historical Resources)

5.5.2.2.1 Construction

Alternative 2 proposes the construction of all proposed Project components with the exception of Terminal 9 and the Terminal 9 APM and parking facility. As with the proposed Project, construction of Alternative 2 would not require demolition or alteration of any of the four properties that have been identified as eligible for historic listing in the near vicinity of the Project site (i.e., the 1961 ATCT, the former McCulloch Building, the former Union Savings and Loan building, and the former Aircraft School Building). As with the proposed Project, construction of Alternative 2 would not cause a substantial adverse change in the significance of a historical resource pursuant to State CEQA Guidelines Section 15064.5 and impacts on historical resources would be ***less than significant***.

5.5.2.2.2 Operations

Alternative 2 would include Concourse 0 and the same landside improvements that are proposed as part of the Project. Therefore, impacts on the former Union Savings and Loan Building and the former Aircraft School Building would be the same as under the proposed Project (see Table 5-3). For both resources, the proposed improvements would alter the immediate surroundings of the historical buildings, but not to a level that would result in a significant impact. Under Alternative 2, Concourse 0 and the landside improvements would alter the immediate surroundings of the 1961 ATCT, and the landside improvements would alter the surroundings of the former McCulloch Building. However, because this alternative would not include Terminal 9 and its associated facilities (parking facility, APM station, and Terminal 9 elevated roadways), the immediate surroundings of these historical resources would be altered to a lesser degree than under the proposed Project. As with the proposed Project, these alterations would not materially impair the buildings such that they can no longer convey their historic significance; therefore, impacts on historical resources associated with operation of Alternative 2 would be ***less than significant***.

5.5.2.2.3 Cumulative

Alternative 2 would include the construction and operation of all proposed Project components except for Terminal 9, the Terminal 9 parking facility, and Terminal 9 APM station. As discussed above, construction and operation of Alternative 2 would have a lower impact on historical resources than the proposed Project. As discussed in Section 4.2, *Cultural Resources (Historical Resources)*, the proposed

Project would have a cumulatively less than significant impact on historical resources. Because the proposed Project would have a less than significant cumulative impact on historical resources, and because Alternative 2 would have a lower impact on historical resources than the proposed Project, the cumulative impacts from Alternative 2 on historical resources would be ***less than significant***.

5.5.2.3 Energy

5.5.2.3.1 Construction

Alternative 2 would include construction of all the proposed Project components, with the exception of Terminal 9 and the Terminal 9 APM station and parking facility. Energy use during construction of Alternative 2 would be lower than under the proposed Project because fewer components would be constructed. Construction would comply with applicable plans and policies, including those related to building energy use and fuel efficiency. As a result, construction of this alternative would not result in wasteful, inefficient, or unnecessary consumption of energy resources, nor would it conflict with or obstruct a state or local plan for renewable energy or energy efficiency. As with the proposed Project, construction of Alternative 2 would result in ***less than significant*** impacts on energy resources.

5.5.2.3.2 Operations

Operation of Alternative 2 would not require electricity or natural gas for Terminal 9 and its associated facilities, therefore energy demand from operation of the Alternative 2 facilities would be less than the proposed Project. Consumption of Jet A by aircraft and APUs and consumption of diesel and gasoline by GSE would be similar to the proposed Project, as the level of aircraft activity would be the same under both alternatives. Operation of Alternative 2 would result in slightly less demand for vehicle-related fuels due to the lower level of employment without Terminal 9. State and local plans pertaining to building, lighting, and fuel efficiency would apply to Alternative 2; therefore, operation of Alternative 2 would not result in wasteful, inefficient, or unnecessary consumption of energy resources, nor would it conflict with or obstruct a state or local plan for renewable energy or energy efficiency. As with the proposed Project, operation of Alternative 2 would result in ***less than significant*** impacts on energy resources.

5.5.2.3.3 Cumulative

Alternative 2 would include the construction and operation of all proposed Project components except for Terminal 9, the Terminal 9 parking facility, and Terminal 9 APM station. As discussed above, construction and operation of Alternative 2 would have a lower impact on energy resources than the proposed Project. As discussed in Section 4.3, *Energy*, the proposed Project would have a cumulatively less than significant impact on energy resources. Because the proposed Project would have a less than significant cumulative impact on energy resources, and because Alternative 2 would have a lower impact on energy resources than the proposed Project, the cumulative impacts from Alternative 2 on energy resources would be ***less than significant***.

5.5.2.4 Greenhouse Gas Emissions

5.5.2.4.1 Construction and Operations

Alternative 2 would include the construction of all proposed Project components except for Terminal 9 and its associated facilities, including the Terminal 9 parking facility and APM station. Consequently, GHG emissions are expected to be less than that predicted for the proposed Project. Although construction-related GHG emissions would be less than the proposed Project, emissions from the construction of Alternative 2 would still result in a net increase in short-term and temporary emissions of GHGs from construction-related activities.

Although Alternative 2 would include the airfield improvements proposed under the Project, the omission of Terminal 9 would result in an increase in aircraft taxi time estimated to be 8.5 percent under Alternative 2. The increase in aircraft taxi time would result in an increase in operational GHG emissions compared to the proposed Project from additional fuel burn. Therefore, overall GHG emissions associated with airport operations would be expected to result in a net increase over baseline conditions that would be more severe than under the proposed Project.

The amortized construction emissions combined with operational emissions under Alternative 2 would result in total annual emissions of GHGs that would result in a net increase over baseline conditions. Therefore, as with the proposed Project, impacts of GHG emissions from Alternative 2 would be ***significant and unavoidable***.

5.5.2.4.2 Cumulative

Alternative 2 would include the construction and operation of all proposed Project components except for Terminal 9, the Terminal 9 parking facility, and Terminal 9 APM station. As discussed above, construction of Alternative 2 would have a slightly lower impact on GHG emissions than the proposed Project, while operations under Alternative 2 would have a greater impact on GHG emissions than the proposed Project. As discussed in Section 4.4, *Greenhouse Gas Emissions*, implementation of the proposed Project would result in a cumulatively significant and unavoidable impact on GHG emissions, and the proposed Project's contribution would be cumulatively considerable. Because the proposed Project would have a significant and unavoidable cumulative impact on GHG emissions, and because Alternative 2 would have an equal or greater impact on GHG emissions than the proposed Project, the cumulative impacts with implementation of Alternative 2 on GHG emissions would be significant and unavoidable and the contribution of Alternative 2 to this impact would be ***cumulatively considerable***.

5.5.2.5 Hazardous Materials

5.5.2.5.1 Construction

Alternative 2 proposes the construction of all proposed Project components, with the exception of Terminal 9 and the Terminal 9 APM station and parking facility. As a result, as shown in Table 5-4, Alternative 2 would have the same impacts as the proposed Project on the Terminal 1 Fuel Valve Vault site, the AlliedSignal/Honeywell site, and the PFAS area of interest. As with the proposed Project, these impacts would be less than significant. Alternative 2 would not involve construction of Terminal 9 and its associated facilities. As such, construction of this alternative would avoid closure of up to three monitoring wells associated with remediation of the UAL MOC site that would occur under the proposed Project. As discussed in Section 4.5, *Hazardous Materials*, closure of the monitoring wells would not interfere with free product removal at the UAL MOC site and, consequently, the proposed Project would not have a significant impact on human health or the environment. Therefore, Alternative 2 would not avoid any significant impacts related to hazardous materials. As with the proposed Project, construction of Alternative 2 would result in a ***less than significant impact*** related to hazardous materials.

5.5.2.5.2 Operations

Operations under Alternative 2 would not involve excavation, extraction of groundwater, or any activity that could damage or physically interfere with ongoing or future contamination monitoring or remediation activities at the listed sites. As such, as with the proposed Project, operation of Alternative 2 would have ***no impact*** related to hazardous materials.

5.5.2.5.3 Cumulative

Alternative 2 would include the construction and operation of all proposed Project components except for Terminal 9, the Terminal 9 parking facility, and Terminal 9 APM station. As discussed above,

construction and operation of Alternative 2 would have a lower impact on hazardous materials than the proposed Project. As discussed in Section 4.5, *Hazardous Materials*, the proposed Project would have a cumulatively less than significant impact on hazardous materials. Because the proposed Project would have a less than significant cumulative impact on hazardous materials, and because Alternative 2 would have a lower impact on hazardous materials than the proposed Project, the cumulative impacts from Alternative 2 on hazardous materials would be ***less than significant***.

5.5.2.6 Land Use and Planning

5.5.2.6.1 Construction and Operations

Alternative 2 would include construction and operation of all the proposed Project components, with the exception of Terminal 9 and the Terminal 9 APM station and parking facility. Although this alternative would include the proposed roadway improvements, without construction of the proposed APM station, Alternative 2 would not advance regional and local policies aimed at enhancing mobility options for LAX passengers to the same extent as the proposed Project. However, the omission of Terminal 9 and the Terminal 9 APM station would not cause significant environmental impacts due to inconsistency with these policies. As described in Sections 5.5.2.1.1 and 5.5.2.4 above, GHG and vehicle emissions under this alternative would increase compared to existing baseline conditions, although to a lesser extent than the proposed Project. However, as with the proposed Project, Alternative 2 would comply with the overall intent of these land use plans and Alternative 2 would result in ***less than significant*** impacts to land use and planning.

5.5.2.6.2 Cumulative

Alternative 2 would include the construction and operation of all proposed Project components except for Terminal 9, the Terminal 9 parking facility, and Terminal 9 APM station. As discussed above, Alternative 2 would not advance regional and local policies aimed at enhancing mobility options for LAX passengers to the same extent as the proposed Project. As discussed in Section 4.6, *Land Use and Planning*, the proposed Project would have a cumulatively less than significant impact on land use. Because the proposed Project would have a less than significant cumulative impact on land use, and because Alternative 2 would, like the proposed Project, comply with the overall intent of these plans, the cumulative impacts from Alternative 2 on land use would be ***less than significant***.

5.5.2.7 Noise

5.5.2.7.1 Aircraft Noise

5.5.2.7.1.1 Construction

Alternative 2 would include construction of all the airfield improvements, including the proposed modifications to the runway exits. As with the proposed Project, this alternative would require temporary runway closures in 2023 and 2024, which would result in temporary changes in aircraft noise exposure levels in nearby areas. As with the proposed Project, for some noise-sensitive land uses, the temporary increase in aircraft noise during construction of Alternative 2 would result in a short-term (i.e., 4.5-month) ***significant and unavoidable impact***.

5.5.2.7.1.2 Operations

Future aircraft activity under Alternative 2 would be the same as under the proposed Project; therefore, future aircraft noise impacts would be the same under both. As with the proposed Project, aircraft operations under Alternative 2 would increase the area that would be subject to elevated aircraft noise levels (i.e., higher than 65 dBA CNEL), which would expose additional residences and other noise-sensitive uses to aircraft noise that exceed the threshold of significance. As with the proposed Project, even with

implementation of the proposed mitigation measure (MM-AN (ATMP)-1, Sound Insulation Programs), impacts associated with aircraft noise under Alternative 2 would be ***significant and unavoidable.***

5.5.2.7.1.3 Cumulative

As discussed in Section 4.7.1, *Aircraft Noise*, none of the development projects identified in Chapter 3, *Overview of Project Setting,* would have aircraft operations that could contribute to cumulative aircraft noise impacts. Therefore, cumulative impacts from aircraft noise under the proposed Project would be less than significant (i.e., although aircraft noise impacts associated with the proposed Project, alone, would be significant and unavoidable, there are no other projects involving aircraft activity; hence there is no *cumulative* aircraft noise and there would not be a significant cumulative impact). The lack of other projects that contribute to cumulative aircraft noise impacts applies to Alternative 2 in the same way as the proposed Project. As with the proposed Project, under Alternative 2, cumulative impacts associated with aircraft noise would be ***less than significant***.

5.5.2.7.2 Roadway Traffic Noise

5.5.2.7.2.1 Operations

Under Alternative 2, the roadway alignments would be the same as the proposed Project, except that the access to Terminal 9 would not be constructed. The proximity of the roadway alignments that would be construction under Alternative 2 would be the same as the proposed Project with respect to where noise-sensitive receptors are located and the roadways would carry a similar amount of traffic. The most notable difference between Alternative 2 and the proposed Project would be that, in the absence of Terminal 9, there would not be the extension of Jetway Boulevard south of Century Boulevard that would provide access to and from Terminal 9. That roadway is not in close proximity to noise-sensitive receptors. For these reasons, the roadway traffic noise levels on the local roadway network projected for 2028 and the associated increases in roadway traffic noise compared to baseline conditions would not be materially different between Alternative 2 and the proposed Project. As with the proposed Project, impacts under Alternative 2 would be ***less than significant***.

5.5.2.7.2.2 Cumulative

As discussed above, Alternative 2 would have a materially similar impact on roadway traffic noise as the proposed Project. As discussed in Section 4.7.2, *Roadway Traffic Noise*, the proposed Project would have a less than significant cumulative impact on roadway traffic noise. Because the proposed Project would have a less than significant cumulative impact on roadway traffic noise, and because Alternative 2 would have a similar impact on roadway traffic noise as the proposed Project, the cumulative impacts from Alternative 2 on roadway traffic noise would be ***less than significant***.

5.5.2.7.3 Construction Traffic and Equipment Noise and Vibration

5.5.2.7.3.1 Construction

Alternative 2 would include construction of all proposed Project components with the exception of Terminal 9, and the Terminal 9 APM station and parking facility. As with the proposed Project, construction of Alternative 2 would result in construction noise associated with airfield improvements, roadway improvements, and Concourse 0 construction. Because Alternative 2 would have less construction than the proposed Project, there would be fewer peak daily construction trips, and construction traffic noise would be reduced as compared to the proposed Project. As with the proposed Project, impacts related to construction traffic noise would be less than significant. Alternative 2 would include the same roadway improvements as the proposed Project. As impacts associated with construction vibration would be associated with construction of the roadways, construction vibration

impacts would be the same as with the proposed Project. As with the proposed Project, impacts from construction equipment vibration would be less than significant.

As with the proposed Project, construction of the airfield improvements, roadways, and Concourse 0 would generate noise from construction equipment. The potential noise impacts from each construction activity on the nearest noise-sensitive receptors are shown in **Table 5-9**. As explained above in Section 5.5.1.7.3, the noise levels shown in the table are very conservative; actual construction-related noise levels associated with Alternative 2 would be lower than those identified in Table 5-9. Because the Terminal 9 facilities would not be constructed, as shown in Table 5-5 and Table 5-9, Alternative 2 would avoid significant impacts associated with the proposed Project at one Receptor Site (R7 Residence Inn by Marriott), and reduce, but not avoid, significant impacts associated with the proposed Project at four Receptor Sites (R8 Sheraton Gateway Hotel, R9 H Hotel/Homewood Suites, R10 Hyatt Regency LAX, and R11 Courtyard Los Angeles LAX/Century Boulevard). Nevertheless, as shown in Table 5-9, implementation of Alternative 2 would result in construction noise levels above the threshold of significance at several noise-sensitive receptors due to the construction of Concourse 0 and the roadway improvements, as well as from the combined construction activities. As with the proposed Project, Mitigation Measures MM-N (ATMP)-1, Construction Noise Control Plans, MM-N (ATMP)-2, Construction Scheduling, and MM-N (ATMP)-3, Construction Equipment, would reduce impacts associated with construction traffic and equipment noise under Alternative 2 to a level that is ***less than significant.***

Noise associated with the use of staging areas for Alternative 2 would be the same as the proposed Project (see Table 4.7.3-6). As with the proposed Project, impacts would be ***less than significant***.

5.5.2.7.3.2 Cumulative

As discussed above, Alternative 2 would have a lower impact on construction traffic and equipment noise and vibration than the proposed Project. As discussed in Section 4.7.3, *Construction Traffic and Equipment Noise and Vibration*, the proposed Project would have a less than significant cumulative impact on construction traffic and equipment noise and vibration. Because the proposed Project would have a less than significant cumulative impact on construction traffic and equipment noise and vibration, and because Alternative 2 would have a lower impact on construction traffic and equipment noise and vibration than the proposed Project, the cumulative impacts from Alternative 2 on construction traffic and equipment noise and vibration would be ***less than significant***.

Table 5-9
Construction Noise Levels at Noise-Sensitive Receptor Sites - Alternative 2

ID	Receptor	Background Conditions[1] CNEL (dBA)	Distance from Construction Activity (feet)	Construction Activity	Construction Equipment CNEL (dBA)	Total[2] CNEL (dBA)	Significance Threshold[3]	Above Threshold?
R1	Residential development in Playa del Rey	67.8	3,200	Airfield improvements	60.5	68.5	72.8	No
R2	Saint Bernard High School	67.7	2,500	Airfield improvements	62.6	68.9	72.7	No
R3	Residential development along southern edge of Westchester	68.4	1,500	Airfield improvements	67.1	70.8	73.4	No
R4	Park West Apartments on Lincoln Boulevard	66.3	1,200	Airfield improvements	69.0	70.9	71.3	No
R5	Residential uses along West 88th Street near Liberator Ave	67.9	2,500	Airfield improvements	62.6	69.0	72.9	No
R6	Residential uses near Westchester Parkway and Kittyhawk Ave	72.0	1,750	Airfield improvements	65.7	72.9	77.0	No
		72.0	2,850	Terminal (C0) construction	61.9	72.4	77.0	No
		72.0	1,500	Roadway construction	67.5	73.3	77.0	No
		72.0	NA	Combined airfield improvements, terminal (CO) construction, and roadway construction	70.4	74.3	77.0	No
R7	Residence Inn by Marriott Los Angeles LAX/Century Boulevard	70.2	2,900	Terminal (C0) construction	61.7	70.9	75.2	No
		70.2	900	Roadway construction	71.9	74.1	75.2	No
		70.2	NA	Combined terminal (C0) and roadway construction	72.3	74.4	75.2	No
R8	Sheraton Gateway Los Angeles Hotel	69.3	1,600	Terminal (C0) construction	66.9	71.3	74.3	No
		69.3	100	Roadway construction	91.0	91.0	74.3	Yes[4]
		69.3	NA	Combined terminal (C0) and roadway construction	91.0	91.1	74.3	Yes[4]

Table 5-9
Construction Noise Levels at Noise-Sensitive Receptor Sites - Alternative 2

ID	Receptor	Background Conditions[1] CNEL (dBA)	Distance from Construction Activity (feet)	Construction Activity	Construction Equipment CNEL (dBA)	Total[2] CNEL (dBA)	Significance Threshold[3]	Above Threshold?
R9	H Hotel Los Angeles/ Homewood Suites by Hilton Los Angeles International Airport	70.4	1,200	Terminal (C0) construction	69.4	72.9	75.4	No
		70.4	55	Roadway construction	96.2	96.2	75.4	Yes[4]
		70.4	NA	Combined terminal (C0) and roadway construction	96.2	96.2	75.4	Yes[4]
R10	Hyatt Regency Los Angeles International Airport	73.4	350	Terminal (C0) construction	80.1	80.9	78.4	Yes[4]
		73.4	150	Roadway construction	87.5	87.7	78.4	Yes[4]
		73.4	NA	Combined terminal (C0) and roadway construction	88.2	88.3	78.4	Yes[4]
R11	Courtyard Los Angeles LAX/Century Boulevard	71.7	1,000	Terminal (C0) construction	71.0	74.4	76.0	No
		71.7	150	Roadway construction	87.5	87.6	76.0	Yes[4]
		71.7	NA	Combined terminal (C0) and roadway construction	87.6	87.7	76.0	Yes[4]

Source: HMMH, CDM Smith, 2020.

Notes:

1 Background condition obtained through AEDT using 24-hour CNEL dBA.

2 Background plus Alternative 2 construction noise.

3 Significance Threshold = Background CNEL + 5 dBA

4 Construction equipment noise levels conservatively assume all equipment would be utilized at the same time and at all hours of the 24-hour day, both of which are unlikely.

Key:
C0 = Concourse 0

5.5.2.8 Transportation

5.5.2.8.1 Plans, Programs, Ordinances, and Policies Analysis

Consistent with the methodology used in Section 4.8.5.1.1. for the proposed Project, a review was conducted to determine whether Alternative 2 would conflict with a transportation-related City or regional plan, program, ordinance, or policy addressing the circulation system (including transit, roadways, bicycle, and pedestrian facilities) that was adopted to protect the environment. Transportation policies or standards adopted to protect the environment include those that support multimodal transportation options and a reduction in VMT.

Similar to what was discussed in Table 4.8-11 and Table 4.8-12 for the proposed Project, Alternative 2 would not be inconsistent with transportation-related plans, policies, ordinances, and programs; hence, the impact of both Alternative 2 and the proposed Project would be ***less than significant*** relative to plans, programs, ordinances, and policies.

5.5.2.8.2 VMT Analysis

An additional model run for Alternative 2 was not undertaken due to the similarity of this alternative (with the exception of Terminal 9, and the Terminal 9 APM station and parking facility) to the proposed Project. Such a model run would not provide meaningful information regarding the VMT impacts of Alternative 2 as compared to the proposed Project. It is anticipated that the employee VMT rate (i.e., VMT per employee) would be similar to the Projected Future Conditions Baseline. This is because, as with the Projected Future Conditions Baseline, the new employees for Concourse 0 would use the employee parking lot near the ITF West and the new proposed Project roadways would not influence their trip choice and routing.

The access to Concourse 0 is provided via the CTA. Under the proposed Project, passengers drop off and pick up are allocated to CTA and Terminal 9. Under Alternative 2 all passenger drop off and pick up activity will occur in the CTA. The total passenger VMT under Alternative 2 is expected to be slightly more than the proposed Project, as passengers accessing Terminal 9 directly from northbound Sepulveda Boulevard or Jetway Boulevard would be required to access the CTA using the new proposed Project roadways.

Alternative 2 is estimated to have 1,472 new employees at Concourse 0 (less than the proposed Project). Because the location of employee parking destinations would be the same as under the Projected Future Conditions Baseline, however, the VMT per employee rate would be the same. Thus, the VMT per employee under Alternative 2 is not 15 percent below the baseline threshold of significance of 20.4 VMT per employee and would be a ***significant impact***. Because Alternative 2 has fewer employees than the proposed Project due to the elimination of Terminal 9, however, the magnitude of the impact is less than the proposed Project. With implementation of the mitigation proposed in Section 4.8.5.2.2, the impact related to employment VMT would be reduced to ***less than significant*** for both Alternative 2 and the proposed Project.

Alternative 2 would also result in a net increase in total passenger VMT over the 2028 Projected Future Conditions Baseline. The magnitude of the impact would be slightly higher than the proposed Project due to additional travel distance for passengers traveling in the CTA (i.e., without the parking facility proposed as part of Terminal 9, some proportion of passengers that would have used Terminal 9 would travel to/from the main portion of the CTA, which is slightly farther away). Therefore, Alternative 2 would result in a significant impact. Even with implementation of the mitigation package for the proposed Project as described in Section 4.8.5.2.2, the passenger VMT impact would remain a ***significant and unavoidable impact*** for both Alternative 2 and the proposed Project

Roadway improvements under Alternative 2 are essentially the same as those of the proposed Project. Therefore, the short-term and long-term induced VMT impacts of Alternative 2 would be consistent with those of the proposed Project as described in Section 4.8.5.4 and would be a ***significant and unavoidable impact*** for both Alternative 2 and the proposed Project.

5.5.2.8.3 Hazard Analysis

Impacts regarding the potential increase of hazards due to a geometric design feature generally relate to the design of access points to and from [a] project site, and may include safety, operational, or capacity impacts. Impacts can be related to vehicle/vehicle, vehicle/bicycle, or vehicle/pedestrian conflicts, as well as to operational delays caused by vehicles slowing and/or queuing to access a project site. In the case of Alternative 2, these conflicts may be created by ramp configurations or through the placement of ramps, loading areas, or intersections in areas of inadequate visibility, adjacent to bicycle or pedestrian facilities, or too close to busy or congested intersections. These impacts were evaluated for permanent conditions after Project completion.

Consistent with the proposed Project, this analysis focused upon locations where the new roadways introduce a new vehicle access point and/or driveways to the site. The following five locations that would access the Project site from the public right-of-way and that may be affected by Alternative 2 driveways and infrastructure are:

- Century Boulevard and Jetway Boulevard
- Sepulveda Boulevard and 96th Street
- Sepulveda Boulevard and Century Boulevard
- Sepulveda Boulevard south of World Way
- Vicksburg Avenue between 96th Street and 98th Street

Based on the proposed infrastructure, level of existing activity, and anticipated level of activity attributable to the proposed Project, the proposed Project would not substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) and would comply with City design standards. Moreover, the land uses associated with Alternative 2 (i.e., roadway improvements and Concourse 0) would not be incompatible with existing land uses in the Project area, which consist of airport and commercial uses. For these reasons, the impact would be ***less than significant*.**

Freeway Safety Analysis

The LADOT interim guidance for freeway safety analysis applied to the proposed Project, described in Section 4.8.5.5.1, was also used to assess freeway safety impacts relative to Alternative 2. This alternative has similar passenger levels of activity and a lower number of total employees relative to the proposed Project; therefore, Alternative 2 would generate less trips on a daily basis than the proposed Project. As a result, it is anticipated that the vehicle trips on freeway off-ramps would be less than the proposed Project. Therefore, as with the proposed Project, Alternative 2 would not have a substantial effect at the analyzed location or have a negative effect on traffic safety.

Overall, implementation of Alternative 2 would have a ***less than significant impact*** relative to hazards, as would also be the case for the proposed Project.

5.5.2.8.4 Cumulative Impacts

Cumulative Impacts Associated with Plans, Programs, Ordinances, and Policies

The cumulative impacts of Alternative 2 related to plan consistency would be consistent with those of the proposed Project, as described in Section 4.8.6.1, which would be ***less than significant.***

Cumulative Impacts Associated with VMT

Alternative 2 would have an estimated 1,472 new employees for Concourse 0 (i.e., less than the proposed Project in the absence of Terminal 9). The measure for employee VMT is efficiency based, and implementation of the VMT reduction strategies presented in Section 4.8.5.2.2 would reduce the project-related VMT per employee for Alternative 2 to a level that is 15 percent or more below the Projected Future Conditions Baseline VMT; specifically, mitigation would reduce the VMT per employee to 20.4 or less. Therefore, similar to the proposed Project, no cumulative impact would occur relative to employment VMT.

For passenger VMT, the Projected Future Conditions Baseline (2028) includes all the passenger activity projected to occur at that time. As such, there would be no significant cumulative passenger VMT impacts beyond what is already accounted for in the baseline. Relative to probable future passenger growth that would occur subsequent to 2028, the nature and level of increased VMT would generally be in proportion to the impact identified for the proposed Alternative 2. The increase in passenger VMT associated with Alternative 2, as compared to passenger VMT in the 2028 Projected Future Conditions Baseline, is primarily attributable to the 5.8 additional lane miles that would occur with the proposed Project roadway system improvements. As future passenger levels increase beyond 2028, the total passenger VMT would also increase from the additional passengers on that roadway system. The increase in total passenger VMT would be generally proportional to the increase in MAP, assuming the mode splits (i.e., percentages of passengers driving their own vehicles, taking TNCs, taking shuttles, using rental cars, taking transit, etc.) and mode assignments (i.e., percentages of vehicles going to/from the CTA, or the ITFs, or the CONRAC, etc.) would not change substantially from 2028 conditions. As such, there would be no cumulative passenger VMT impact in 2028 beyond what is already identified for that year, but total passenger VMT would increase in subsequent years. Based on the threshold of significance for passenger VMT being no net increase over Projected Future Conditions Baseline, that increase would represent a significant cumulative impact for passenger VMT. As described in Section 4.8.5.3, VMT reduction strategies are proposed as mitigation, but would not reduce the impact to less than significant. Such would also be the case for the cumulative impact, which would be ***significant and unavoidable***.

Cumulative long-term induced VMT impacts of Alternative 2 would be consistent with those of the proposed Project, as described in Section 4.8.6.2.

Overall, it is anticipated that there would be significant cumulative impacts related to VMT and that the proposed Alternative 2 would have a ***cumulatively considerable contribution*** to that impact.

Cumulative Impacts Associated with Hazards

The cumulative impacts of Alternative 2 related to hazards would be consistent with those of the proposed Project as described in Section 4.8.6.3. Such impacts would be ***less than significant*** for both Alternative 2 and the proposed Project.

5.5.2.9 Utilities

5.5.2.9.1 Water Supply

5.5.2.9.1.1 Construction

Alternative 2 would include construction of all the proposed Project components, with the exception of Terminal 9 and the Terminal 9 APM station and parking facility. Because Alternative 2 would not include Terminal 9, this alternative would avoid the conveyance improvements needed to provide service connections for Terminal 9. Water use during construction of Alternative 2 would be less than water use during construction of the proposed Project based on the lower level of development under this

alternative. As with the proposed Project, construction of Alternative 2 would result in ***less than significant*** impacts on water supply and infrastructure.

5.5.2.9.1.2 Operations

Operation of this alternative would not require water for Terminal 9 landscaping, the Terminal 9 cooling tower, or operations and maintenance (e.g., cleaning) of the terminal facility. Therefore, water demand from operation of the Alternative 2 facilities would be less than the proposed Project. Water demand associated with increased passenger activity under Alternative 2 would be the same as under the proposed Project. Because a large portion of the future water demand would be associated with increased passenger activity, water demand under Alternative 2 would only be marginally lower than under the proposed Project. Since sufficient water supplies would be available, as with the proposed Project, operation of Alternative 2 would result in ***less than significant*** impacts on water supply and infrastructure.

5.5.2.9.1.3 Cumulative

Alternative 2 would include the construction and operation of all proposed Project components except for Terminal 9, the Terminal 9 parking facility, and Terminal 9 APM station. As discussed above, construction and operation of Alternative 2 would have a lower impact on water supply than the proposed Project. As discussed in Section 4.9.1, *Water Supply*, the proposed Project would have a cumulatively less than significant impact on water supply. Because the proposed Project would have a less than significant cumulative impact on water supply, and because Alternative 2 would have a lower impact on water supply than the proposed Project, the cumulative impacts from Alternative 2 on water supply would be ***less than significant***.

5.5.2.9.2 Wastewater Generation

5.5.2.9.2.1 Construction

This alternative would require the same conveyance improvements for Concourse 0 that would be necessary under the proposed Project. However, wastewater generation from construction of Alternative 2 would be lower than the proposed Project based on the lower level of development under this alternative. As with the proposed Project, construction of Alternative 2 would result in ***less than significant*** impacts on wastewater conveyance and treatment capacity.

5.5.2.9.2.2 Operations

Operation of Alternative 2 would not result in wastewater generation by new employees at Terminal 9; however, wastewater generation associated with increased passenger activity under Alternative 2 would be the same as under the proposed Project. Because the majority of future wastewater generation would be associated with increased passenger activity, wastewater generation under Alternative 2 would only be marginally lower than under the proposed Project. Since sufficient wastewater treatment capacity would be available, as with the proposed Project, operation of Alternative 2 would result in ***less than significant*** impacts on wastewater conveyance and treatment capacity.

5.5.2.9.2.3 Cumulative

Alternative 2 would include the construction and operation of all proposed Project components except for Terminal 9, the Terminal 9 parking facility, and Terminal 9 APM station. As discussed above, construction and operation of Alternative 2 would have a lower impact on wastewater than the proposed Project. As discussed in Section 4.9.2, *Wastewater Generation*, the proposed Project would have a cumulatively less than significant impact on wastewater. Because the proposed Project would have a less than significant cumulative impact on wastewater, and because Alternative 2 would have a lower impact

on wastewater than the proposed Project, the cumulative impacts from Alternative 2 on wastewater would be ***less than significant***.

5.5.3 Alternative 3: Terminal 9 Only

5.5.3.1 Air Quality and Human Health Risk

5.5.3.1.1 Air Quality

5.5.3.1.1.1 Construction

Emissions

Alternative 3 proposes the construction of all proposed Project components except for Concourse 0. As discussed in Section 4.1.1, *Air Quality*, temporary runway closures during construction of the proposed Project would result in short-term significant and unavoidable construction-related indirect emissions of CO, VOC, NO_X, and SO_X. Construction activities associated with the proposed Project would also result in significant and unavoidable direct emissions of NO_X that would occur in four of the years during the construction period. The short-term impacts caused by temporary runway closures would occur under both the proposed Project and Alternative 3. With respect to impacts from ongoing construction activities, because Alternative 3 would omit the construction of Concourse 0, it would have reduced overall emissions of CO, VOC, NO_X, SO_X, PM_{10}, and $PM_{2.5}$ related to ongoing construction activities as compared to the proposed Project. The direct construction NO_X emissions would exceed the construction daily significance threshold for two of the years during the construction period. The same mitigation measures would apply as those recommended for the proposed Project. Nevertheless, it is expected that construction-related impacts with respect to regional emissions of CO, VOC, NO_X, and SO_X under Alternative 3 would still be ***significant and unavoidable***.

Concentrations

The proposed Project would result in a less than significant impact with respect to localized concentrations of CO, NO_2, SO_2, PM_{10}, and $PM_{2.5}$ during construction. Because Alternative 3 would omit the construction of Concourse 0, concentrations of criteria air pollutants would be expected to be less than the proposed Project. Construction concentration impacts are driven by the roadway improvements, which are situated in closest proximity to off-site receptors. Because Alternative 3 would include construction of the same roadway improvements proposed as part of the Project, construction concentrations associated with Alternative 3 would be similar to the proposed Project. As with the proposed Project, it is expected that construction-related concentrations of CO, NO_2, SO_2, PM_{10}, and $PM_{2.5}$ under Alternative 3 would be ***less than significant***.

5.5.3.1.1.2 Operations

Emissions

Alternative 3 would include all proposed Project components except for Concourse 0. As discussed in Section 4.1.1, *Air Quality*, operation of the proposed Project would result in significant and unavoidable regional emissions of NO_X, SO_X, PM_{10}, and $PM_{2.5}$. These operations-related emissions would be driven by increased aircraft activity that would occur irrespective of the Project. Thus, as with the proposed Project, it is expected that operations-related impacts with respect to regional emissions of NO_X, SO_X, PM_{10}, and $PM_{2.5}$ under Alternative 3 would be ***significant and unavoidable***.

Concentrations

The proposed Project would result in significant and unavoidable localized concentrations of PM_{10}. As discussed in Section 4.1.1, *Air Quality*, localized concentrations of PM_{10} would be driven by road dust from traffic and would occur near the intersection of 96th Street and Airport Boulevard, adjacent to the location of the ITF West, on Aviation Boulevard, at the entrance to the CONRAC, and at the location of the new CTA entry roadway. Under Alternative 3, instead of the construction of Concourse 0, the Concourse 0 would consist of a passenger parking lot. While the operation the parking lot would provide an alternative parking location for passengers traveling to the airport, and thus would reduce traffic volumes at the ITF West and CONRAC, it is anticipated that such reductions would be minimal. Near the intersection of 96th Street and Airport Boulevard, the peak localized concentration location, daily traffic volumes would be expected to decrease by approximately 2 percent under Alternative 3 as compared to the proposed Project, thereby resulting in a similar nominal decrease in localized concentrations of PM_{10} from road dust in that area. Traffic volume decreases at the peak location were estimated by summing modeled traffic volumes for the roadway links which make up the peak intersection under Alternative 3 and comparing them against the summed modeled traffic volumes for the roadway links which make up the peak intersection under proposed Project. Detailed calculations are provided in **Appendix C.7** of this EIR. Therefore, it is expected that the operations-related local concentrations of PM_{10} would be comparable under Alternative 3 to those under the proposed Project; impacts under both would be ***significant and unavoidable***.

Under both the proposed Project and Alternative 3, local concentrations of NO_2 would be driven by aircraft activity. Although Alternative 3 would include the airfield improvements proposed under the Project, it is anticipated that the omission of Concourse 0 would result in a 3.4 percent increase in aircraft taxi time under Alternative 3 as compared to the proposed Project, as shown in **Table 5-10**. Although operation of the proposed Project would result in a less than significant impact with respect to local concentrations of NO_2, it is expected that the increased aircraft taxi times under Alternative 3 would result in a ***new significant and unavoidable impact*** with respect to local concentrations of NO_2.

Table 5-10
Total Taxi Idle Times - Proposed Project Compared to Alternative 3

Total Taxi Time (min/LTO)		Change in Taxi Time Relative to Proposed Project	
2028 Proposed Project	2028 Alternative 3	min/LTO	Percent
36.40	37.65	1.25	3.4%

Prepared by: CDM Smith, August 2020.

Key:
min/LTO = minutes per landing and takeoff

As shown in Table 4.1.1-14, localized concentrations of CO, SO_2, and $PM_{2.5}$ associated with the proposed Project scenario would be less than significant when compared to baseline conditions. Localized concentrations of CO, and SO_2 are driven by emissions from aircraft operations, which would be higher under Alternative 3 as compared to the proposed Project. Despite the increase in emissions, a 3.4 percent increase in taxi idle times under Alternative 3 would not result in localized concentrations of these pollutants that would approach the respective thresholds of significance. Localized concentrations of $PM_{2.5}$ are driven by vehicle traffic, which would be lower at peak locations under Alternative 3 as compared to the proposed Project. Therefore, as with the proposed Project, it is expected that operational impacts from Alternative 3 with respect to local effects of the emissions of CO, SO_2, and $PM_{2.5}$ would be ***less than significant***.

5.5.3.1.1.3 Cumulative

Alternative 3 would include the construction and operation of all proposed Project components except Concourse 0. As discussed above, construction of Alternative 3 would have a slightly lower impact on air quality than the proposed Project, while operations under Alternative 3 would have an equal or greater impact on air quality than the proposed Project. As discussed in Section 4.1.1, *Air Quality*, the proposed Project would have a cumulatively significant and unavoidable impact on air quality. Because the proposed Project would have a significant and unavoidable cumulative impact on air quality, and because Alternative 3 would have an approximately equal or greater impact on air quality than the proposed Project, the cumulative impacts from Alternative 3 on air quality would be ***significant and unavoidable***.

5.5.3.1.2 Human Health Risk

5.5.3.1.2.1 Construction

Alternative 3 would include the construction of all proposed Project components except for Concourse 0. Because Alternative 3 would omit construction of Concourse 0, there would be less construction than under the proposed Project, with a related reduction in the concentrations of TAC under Alternative 3 as compared to the proposed Project. As with the proposed Project, construction-related impacts to human health from TAC under Alternative 3 would also be ***less than significant***.

5.5.3.1.2.2 Operations

Operations-related emissions would be driven by increased aircraft activity that would occur irrespective of the Project. Although Alternative 3 would include the airfield improvements proposed under the Project, the omission of Concourse 0 would result in an increase in aircraft taxi time, consequently resulting in an increase in emissions compared to the proposed Project from additional fuel burn. Even though TAC emissions would be slightly higher, as with the proposed Project, operations-related impacts to human health risk associated with Alternative 3 would be ***less than significant***. (Note that Section 4.1.2.5.1.2 presents the impacts of the 2028 Without Project scenario. This scenario does not include the airfield improvements that would occur under both the proposed Project and Alternative 2. Aircraft taxi times under the 2028 Without Project scenario would be even higher than under Alternative 3, and would thus result in higher emissions of TAC from additional fuel burn. Operational emissions of TAC from aircraft under Alternative 3 would be lower than those under the 2028 Without Project scenario and higher than the proposed Project.)

5.5.3.1.2.3 Cumulative

Alternative 3 would include the construction and operation of all proposed Project components except Concourse 0. Because Alternative 3 would omit Concourse 0, there would be a lower concentration of TAC from construction and operation compared to the proposed Project. As discussed in Section 4.1.2, *Human Health Risk*, the proposed Project would have a cumulatively less than significant impact on human health risk. Therefore, as with the proposed Project, the cumulative impacts from Alternative 3 on human health risk would be ***less than significant***.

5.5.3.2 Cultural Resources (Historical Resources)

5.5.3.2.1 Construction

Alternative 3 proposes the construction of all proposed Project components with the exception of Concourse 0. As with the proposed Project, construction of Alternative 3 would not require demolition or alteration of any of the four properties that have been identified as eligible for historic listing in the near vicinity of the Project site (i.e., the 1961 ATCT, the former McCulloch Building, the former Union Savings and Loan building, and the former Aircraft School Building). As with the proposed Project, construction of

Alternative 3 would not cause a substantial adverse change in the significance of a historical resource pursuant to State CEQA Guidelines Section 15064.5 and impacts on historical resources would be ***less than significant***.

5.5.3.2.2 Operations

Alternative 3 would include Terminal 9 and its associated facilities and the same landside improvements that are proposed as part of the Project. Therefore, impacts on the former McCulloch Building would be the same as under the proposed Project (see Table 5-3). As with the proposed Project, Alternative 3 would alter the immediate surroundings of this historical building, but not to a level that would result in a significant impact. Because Alternative 3 does not include Concourse 0, it would reduce alteration of the surroundings of the other three historical resources in the near vicinity of the Project site (i.e., the 1961 ATCT, the former Union Savings and Loan building, and the former Aircraft School Building) as compared to the proposed Project. As with the proposed Project, impacts on historical resources associated with operation of Alternative 3 would be ***less than significant***.

5.5.3.2.3 Cumulative

Alternative 3 would include the construction and operation of all proposed Project components except for Concourse 0. Because Alternative 3 does not include Concourse 0, it would reduce alteration of the surroundings of the other three historical resources in the near vicinity of the Project site (i.e., the 1961 ATCT, the former Union Savings and Loan building, and the former Aircraft School Building) as compared to the proposed Project. As discussed in Section 4.2, *Cultural Resources (Historical Resources)*, the proposed Project would have a cumulatively less than significant impact on historical resources. Because the proposed Project would have a less than significant cumulative impact on historical resources, and because Alternative 3 would have a lower impact on historical resources than the proposed Project, the cumulative impacts from Alternative 3 on historical resources would be ***less than significant***.

5.5.3.3 Energy

5.5.3.3.1 Construction

Alternative 3 would include construction of all the proposed Project components, with the exception of Concourse 0 and its associated facilities. Energy use during construction of Alternative 3 would be lower than under the proposed Project because fewer components would be constructed. Construction would comply with applicable plans and policies, including those related to building energy use and fuel efficiency. As a result, construction of this alternative would not result in wasteful, inefficient, or unnecessary consumption of energy resources, nor would it conflict with or obstruct a state or local plan for renewable energy or energy efficiency. As with the proposed Project, construction of Alternative 3 would result in ***less than significant*** impacts on energy resources.

5.5.3.3.2 Operations

Operation of Alternative 3 would not require electricity or natural gas for Concourse 0 and its associated facilities, therefore energy demand from operation of the Alternative 3 facilities would be less than the proposed Project. Consumption of Jet A by aircraft and APUs and consumption of diesel and gasoline by GSE would be similar to the proposed Project, as the level of aircraft activity would be the same under both alternatives. Operation of Alternative 3 would result in slightly less demand for vehicle-related fuels due to the lower level of employment without Concourse 0. State and local plans pertaining to building, lighting, and fuel efficiency would apply to Alternative 3; therefore, operation of Alternative 3 would not result in wasteful, inefficient, or unnecessary consumption of energy resources, nor would it conflict with or obstruct a state or local plan for renewable energy or energy efficiency. As with the proposed Project, operation of Alternative 3 would result in ***less than significant*** impacts on energy resources.

5.5.3.3.3 Cumulative

Alternative 3 would include the construction and operation of all proposed Project components except for Concourse 0. As discussed above, construction and operation of Alternative 3 would have a lower impact on energy resources than the proposed Project. As discussed in Section 4.3, *Energy*, the proposed Project would have a cumulatively less than significant impact on energy resources. Because the proposed Project would have a less than significant cumulative impact on energy resources, and because Alternative 3 would have a lower impact on energy resources than the proposed Project, the cumulative impacts from Alternative 3 on energy resources would be ***less than significant***.

5.5.3.4 Greenhouse Gas Emissions

5.5.3.4.1 Construction and Operations

Alternative 3 would include the construction of all proposed Project components except for Concourse 0. Consequently, GHG emissions are expected to be less than that predicted for the proposed Project. Although construction-related GHG emissions would be less than the proposed Project, emissions from the construction of Alternative 3 would still result in a net increase in short-term and temporary emissions of GHGs from construction-related activities.

Although Alternative 3 would include the airfield improvements proposed under the Project, it is anticipated that the omission of Concourse 0 would result in a 3.4 percent increase in aircraft taxi time under Alternative 3 as compared to the proposed Project. The increase in aircraft taxi time would result in an increase in operational GHG emissions compared to the proposed Project from additional fuel burn. Therefore, overall GHG emissions associated with airport operations would be expected to result in a net increase over baseline conditions that would be more severe than under the proposed Project.

The amortized construction emissions combined with operational emissions under Alternative 3 would result in total annual emissions of GHGs that would result in a net increase over baseline conditions. Therefore, as with the proposed Project, impacts of GHG emissions from Alternative 3 would be ***significant and unavoidable***.

5.5.3.4.2 Cumulative

Alternative 3 would include the construction and operation of all proposed Project components except for Concourse 0. As discussed above, construction of Alternative 3 would have a slightly lower impact on GHG emissions than the proposed Project, while operations under Alternative 3 would have a greater impact on GHG emissions than the proposed Project. As discussed in Section 4.4, *Greenhouse Gas Emissions*, implementation of the proposed Project would result in a cumulatively significant and unavoidable impact on GHG emissions, and the proposed Project's contribution would be cumulatively considerable. Because the proposed Project would have a significant and unavoidable cumulative impact on GHG emissions, and because Alternative 3 would have a greater impact on GHG emissions than the proposed Project, the cumulative impacts with implementation of Alternative 3 on GHG emissions would be significant and unavoidable and the contribution of Alternative 3 to this impact would be ***cumulatively considerable***.

5.5.3.5 Hazardous Materials

5.5.3.5.1 Construction

Alternative 3 proposes the construction of all proposed Project components, with the exception of Concourse 0 and the related airfield improvements at the east end of Taxiway D and Taxiway E. As such, as shown in Table 5-4, Alternative 3 would have the same impacts as the proposed Project on the Terminal 1 Fuel Valve Vault site and the UAL MOC site. In addition, as with the proposed Project, construction of

the roadway improvements under this alternative could result in the closure of monitoring wells at the AlliedSignal/Honeywell site. As discussed in Section 4.5, *Hazardous Materials*, closure of the monitoring wells under the proposed Project would not have an impact on human health or the environment, because the monitoring wells could be relocated to other areas. Therefore, as with the proposed Project, impacts to the AlliedSignal/Honeywell site from construction of the roadway improvements would be less than significant. Construction of Alternative 3 would not involve the construction of Concourse 0 and its associated facilities; therefore, this alternative would avoid modifications to the groundwater remediation system at the AlliedSignal/Honeywell site that would occur during construction of Concourse 0 and its associated facilities under the proposed Project. As discussed in Section 4.5, *Hazardous Materials*, modifications to the groundwater remediation system would be coordinated with, and would be subject to approval by, the Los Angeles Regional Water Quality Control Board; consequently, these modifications would not have an impact on human health or the environment and impacts of the proposed Project would be less than significant. Therefore, Alternative 3 would not avoid any significant impacts related to hazardous materials. As with the proposed Project, construction of Alternative 3 would result in a ***less than significant impact*** related to hazardous materials.

5.5.3.5.2 Operations

Operations under Alternative 3 would not involve excavation, extraction of groundwater, or any activity that could damage or physically interfere with ongoing or future contamination monitoring or remediation activities at the listed sites. As such, as with the proposed Project, operation of Alternative 3 would have ***no impact*** related to hazardous materials.

5.5.3.5.3 Cumulative

Alternative 3 would include the construction and operation of all proposed Project components except for Concourse 0. As discussed above, construction and operation of Alternative 3 would have a lower impact on hazardous materials than the proposed Project. As discussed in Section 4.5, *Hazardous Materials*, the proposed Project would have a cumulatively less than significant impact on hazardous materials. Because the proposed Project would have a less than significant cumulative impact on hazardous materials, and because Alternative 3 would have a lower impact on hazardous materials than the proposed Project, the cumulative impacts from Alternative 3 on hazardous materials would be ***less than significant***.

5.5.3.6 Land Use and Planning

5.5.3.6.1 Construction and Operations

Alternative 3 would include construction and operation of all the proposed Project components, with the exception of Concourse 0 and its associated facilities. The proposed roadway improvements and the proposed APM station at Terminal 9, which would both be constructed under this alternative, would advance regional and local policies aimed at enhancing mobility options for LAX passengers. As described in Sections 5.5.3.1.1 and 5.5.3.4 above, GHG and vehicle emissions under this alternative would increase compared to existing baseline conditions, although to a lesser extent than the proposed Project. However, as with the proposed Project, Alternative 3 would comply with the overall intent of these land use plans and Alternative 3 would result in ***less than significant*** impacts to land use and planning.

5.5.3.6.2 Cumulative

Alternative 3 would include the construction and operation of all proposed Project components except for Concourse 0. As discussed above, construction and operation of Alternative 3 would have a lower impact on land use policies concerning GHG and vehicle emissions than the proposed Project. As discussed in Section 4.6, *Land Use and Planning*, the proposed Project would have a cumulatively less than

significant impact on land use. Because the proposed Project would have a less than significant cumulative impact on land use, and because Alternative 3 would have a lower impact on land use than the proposed Project, the cumulative impacts from Alternative 3 on land use would be ***less than significant***.

5.5.3.7 Noise

5.5.3.7.1 Aircraft Noise

5.5.3.7.1.1 Construction

Alternative 3 would include construction of all the airfield improvements, including the proposed modifications to the runway exits. As with the proposed Project, this alternative would require temporary runway closures in 2023 and 2024, which would result in temporary changes in aircraft noise exposure levels in nearby areas. As with the proposed Project, for some noise-sensitive land uses, the temporary increase in aircraft noise during construction of Alternative 3 would result in a short-term (i.e., 4.5-month) ***significant and unavoidable impact***.

5.5.3.7.1.2 Operations

Future aircraft activity under Alternative 3 would be the same as under the proposed Project; therefore, future aircraft noise impacts would be the same under both. As with the proposed Project, aircraft operations under Alternative 3 would increase the area that would be subject to elevated aircraft noise levels (i.e., higher than 65 dBA CNEL), which would expose additional residences and other noise-sensitive uses to aircraft noise that exceed the threshold of significance. As with the proposed Project, even with implementation of the proposed mitigation measure (MM-AN (ATMP)-1, Sound Insulation Programs), impacts associated with aircraft noise under Alternative 3 would be ***significant and unavoidable.***

5.5.3.7.1.3 Cumulative

As discussed in Section 4.7.1, *Aircraft Noise*, none of the development projects identified in Chapter 3, *Overview of Project Setting,* would have aircraft operations that could contribute to cumulative aircraft noise impacts. Therefore, cumulative impacts from aircraft noise under the proposed Project would be less than significant (i.e., although aircraft noise impacts associated with the proposed Project, alone, would be significant and unavoidable, there are no other projects involving aircraft activity; hence there is no *cumulative* aircraft noise and there would not be a significant cumulative impact). The lack of other projects that contribute to cumulative aircraft noise impacts applies to Alternative 3 in the same way as the proposed Project. As with the proposed Project, under Alternative 3, cumulative impacts associated with aircraft noise would be ***less than significant***.

5.5.3.7.2 Roadway Traffic Noise

5.5.3.7.2.1 Operations

Under Alternative 3, the roadway alignments would be the same as the proposed Project, with the same proximity to noise-sensitive receptors and a similar amount of traffic to the proposed Project. For these reasons, the roadway traffic noise levels on the local roadway network projected for 2028 and the associated increases in roadway traffic noise compared to baseline conditions would not be materially different between Alternative 3 and the proposed Project. As with the proposed Project, impacts under Alternative 3 would be ***less than significant***.

5.5.3.7.2.2 Cumulative

As discussed above, Alternative 3 would have a materially similar impact on roadway traffic noise as the proposed Project. As discussed in Section 4.7.2, *Roadway Traffic Noise*, the proposed Project would have a less than significant cumulative impact on roadway traffic noise. Because the proposed Project would

have a less than significant cumulative impact on roadway traffic noise, and because Alternative 3 would have a similar impact on roadway traffic noise as the proposed Project, the cumulative impacts from Alternative 3 on roadway traffic noise would be ***less than significant***.

5.5.3.7.3 Construction Traffic and Equipment Noise and Vibration

5.5.3.7.3.1 Construction

Alternative 3 would include construction of all proposed Project components with the exception of Concourse 0. As with the proposed Project, construction of Alternative 3 would result in construction noise associated with airfield improvements, roadway improvements, and Terminal 9 construction. Because Alternative 3 would have less construction than the proposed Project, there would be fewer peak daily construction trips, and construction traffic noise would be reduced as compared to the proposed Project. As with the proposed Project, impacts related to construction traffic noise would be less than significant. Alternative 3 would include the same roadway improvements as the proposed Project. As impacts associated with construction vibration would be associated with construction of the roadways, construction vibration impacts would be the same as with the proposed Project. As with the proposed Project, impacts from construction equipment vibration would be ***less than significant***.

As with the proposed Project, construction of the airfield improvements, roadways, and Terminal 9 would generate noise from construction equipment. The potential noise impacts from each construction activity on the nearest noise-sensitive receptors are shown in **Table 5-11**. As explained above in Section 5.5.1.7.3, the noise levels shown in the table are very conservative; actual construction-related noise levels associated with Alternative 3 would be lower than those identified in Table 5-11. Although the Concourse 0 facilities would not be constructed, as shown in Table 5-5 and Table 5-11, Alternative 3 would not avoid any of the significant impacts associated with the proposed Project at any Receptor Sites; however, Alternative 3 would reduce, but not avoid, significant impacts associated with the proposed Project at three Receptor Sites (R7 Residence Inn by Marriott, R10 Hyatt Regency LAX, and R11 Courtyard Los Angeles LAX/Century Boulevard). As shown in Table 5-11, implementation of Alternative 3 would result in construction noise levels above the threshold of significance at several noise-sensitive receptors due to the construction of Terminal 9 and the roadway improvements, as well as from the combined construction activities. As with the proposed Project, Mitigation Measures MM-N (ATMP)-1, Construction Noise Control Plans, MM-N (ATMP)-2, Construction Scheduling, and MM-N (ATMP)-3, Construction Equipment, would reduce impacts associated with construction traffic and equipment noise under Alternative 3 to a level that is ***less than significant.***

Noise associated with the use of staging areas for Alternative 3 would be the same as the proposed Project (see Table 4.7.3-6). As with the proposed Project, impacts would be ***less than significant.***

5.5.3.7.3.2 Cumulative

As discussed above, Alternative 3 would have a lower impact on construction traffic and equipment noise and vibration than the proposed Project. As discussed in Section 4.7.3, *Construction Traffic and Equipment Noise and Vibration*, the proposed Project would have a less than significant cumulative impact on construction traffic and equipment noise and vibration. Because the proposed Project would have a less than significant cumulative impact on construction traffic and equipment noise and vibration, and because Alternative 3 would have a lower impact on construction traffic and equipment noise and vibration than the proposed Project, the cumulative impacts from Alternative 3 on construction traffic and equipment noise and vibration would be ***less than significant***.

Table 5-11
Construction Noise Levels at Noise-Sensitive Receptor Sites - Alternative 3

ID	Receptor	Background Conditions[1] CNEL (dBA)	Distance from Construction Activity (feet)	Construction Activity	Construction Equipment CNEL (dBA)	Total[2] CNEL (dBA)	Significance Threshold[3]	Above Threshold?
R1	Residential development in Playa del Rey	67.8	3,200	Airfield improvements	60.5	68.5	72.8	No
R2	Saint Bernard High School	67.7	2,500	Airfield improvements	62.6	68.9	72.7	No
R3	Residential development along southern edge of Westchester	68.4	1,500	Airfield improvements	67.1	70.8	73.4	No
R4	Park West Apartments on Lincoln Boulevard	66.3	1,200	Airfield improvements	69.0	70.9	71.3	No
R5	Residential uses along West 88th Street near Liberator Ave	67.9	2,500	Airfield improvements	62.6	69.0	72.9	No
R6	Residential uses near Westchester Parkway and Kittyhawk Ave	72.0	1,750	Airfield improvements	65.7	72.9	77.0	No
		72.0	1,500	Roadway construction	67.5	73.3	77.0	No
		72.0	NA	Combined airfield improvements and roadway construction	69.7	74.0	77.0	No
R7	Residence Inn by Marriott Los Angeles LAX/Century Boulevard	70.2	900	Terminal (T9) construction	71.9	74.1	75.2	No
		70.2	900	Roadway construction	71.9	74.1	75.2	No
		70.2	NA	Combined terminal (T9) and roadway construction	74.9	76.2	75.2	Yes[4]
R8	Sheraton Gateway Los Angeles Hotel	69.3	300	Terminal (T9) construction	81.4	81.7	74.3	Yes[4]
		69.3	100	Roadway construction	91.0	91.0	74.3	Yes[4]
		69.3	NA	Combined terminal (T9) and roadway construction	91.5	91.5	74.3	Yes[4]

Table 5-11
Construction Noise Levels at Noise-Sensitive Receptor Sites - Alternative 3

ID	Receptor	Background Conditions[1] CNEL (dBA)	Distance from Construction Activity (feet)	Construction Activity	Construction Equipment CNEL (dBA)	Total[2] CNEL (dBA)	Significance Threshold[3]	Above Threshold?
R9	H Hotel Los Angeles/ Homewood Suites by Hilton Los Angeles International Airport	70.4	250	Terminal (T9) construction	83.3	83.3	75.4	Yes[4]
		70.4	55	Roadway construction	96.2	96.2	75.4	Yes[4]
		70.4	NA	Combined terminal (T9) and roadway construction	96.4	96.4	75.4	Yes[4]
R10	Hyatt Regency Los Angeles International Airport	73.4	550	Terminal (T9) construction	76.2	78.0	78.4	No
		73.4	150	Roadway construction	87.5	87.7	78.4	Yes[4]
		73.4	NA	Combined terminal (T9) and roadway construction	87.8	88.0	78.4	Yes[4]
R11	Courtyard Los Angeles LAX/Century Boulevard	71.7	600	Terminal (T9) construction	75.4	76.9	76.0	Yes[4]
		71.7	150	Roadway construction	87.5	87.6	76.0	Yes[4]
		71.7	NA	Combined terminal (T9) and roadway construction	87.8	87.9	76.0	Yes[4]

Source: HMMH, CDM Smith, 2020.

Notes:
1 Background condition obtained through AEDT using 24-hour CNEL dBA.
2 Background plus Alternative 3 construction noise.
3 Significance Threshold = Background CNEL + 5 dBA
4 Construction equipment noise levels conservatively assume all equipment would be utilized at the same time and at all hours of the 24-hour day, both of which are unlikely.

Key:
T9 = Terminal 9

5.5.3.8 Transportation

5.5.3.8.1 Plans, Programs, Ordinances, and Policies Analysis

Consistent with the methodology used in Section 4.8.5.1.1. for the proposed Project, a review was conducted to determine whether Alternative 3 would be inconsistent with a transportation-related City or regional plan, program, ordinance, or policy addressing the circulation system (including transit, roadways, bicycle, and pedestrian facilities) that was adopted to protect the environment. Transportation policies or standards adopted to protect the environment include those that support multimodal transportation options and a reduction in VMT.

Similar to what was discussed in Table 4.8-11 and Table 4.8-12 for the proposed Project, Alternative 3 would not be inconsistent with transportation-related plans, policies, ordinances, and programs; hence, the impact of Alternative 3 would be ***less than significant,*** which would also be the case for the proposed Project.

5.5.3.8.2 VMT Analysis

Alternative 3 was analyzed by modifying the LAX Travel Demand Model (that was developed and calibrated for the proposed Project) to account for all the transportation elements of Alternative 3. The methodology to calculate VMT impacts is consistent with the methodology described in Section 4.8.2 for the proposed Project VMT analysis. The travel demand model is used to calculate VMT per employee, total passenger VMT and induced VMT. The results of the passenger and employee VMT analysis are presented in **Table 5-12**.

Table 5-12
Alternative 3 Passenger and Employee VMT

Measure	Projected Future Conditions Baseline	Proposed Project	Alternative 3
VMT per Employee	24.0	23.9	23.9
Total Passenger VMT	8,676,209	8,708,995	8,708,065
Source: Fehr and Peers, 2020.			

Alternative 3 has 3,228 new employees for Terminal 9 (less than the total new employees with the proposed Project, based on the absence of Concourse 0). The VMT per employee under Alternative 3 is similar to proposed Project, however it is not 15 percent below the baseline (i.e., 20.4), which is the threshold of significance. Because Alternative 3 would generate VMT per employee that would exceed 15 percent below the Projected Future Conditions Baseline VMT per employee rate, this would be a ***significant impact***, which would also be the case for the proposed Project. However, the magnitude of the impact is less than the proposed Project and with implementation of similar mitigation, as proposed in Section 4.8.5.2.2, the impact related to employment VMT for Alternative 3 would be reduced to a level that is ***less than significant***, also be the case for the proposed Project**.**

Alternative 3 would result in a net increase of 31,856 total passenger VMT over the 2028 Projected Future Conditions Baseline. The difference between Alternative 3 and the proposed Project is 930 VMT. Relative to the percent increase over baseline conditions, both Alternative 3 and the proposed Project would result in a VMT increase of 0.37 percent. Maintaining the Park 'N Fly parking lot in its current location helps to reduce VMT relative to the proposed Project. Under Alternative 3, passengers would walk to the CTA from Park 'N Fly, whereas under the proposed Project, these passengers are allocated to the other parking facilities and would take a shuttle to ITF West and use APM to access the CTA. Although, the magnitude of the impact would be less than the proposed Project, this would still be a ***significant impact***. Even with implementation of the mitigation package for the proposed Project as described in Section 4.8.5.2.2, the

passenger VMT impact would remain a ***significant and unavoidable impact***., as would also be the case for the proposed Project.

Roadway improvements under Alternative 3 would be consistent with those of the proposed Project. Therefore, the short-term and long-term induced VMT impacts of Alternative 3 would be consistent with those of the proposed Project as described in Section 4.8.5.4. Under both Alternative 3 and the proposed Project, the short-term and long-term induced VMT would be a ***significant and unavoidable impact.***

5.5.3.8.3 Hazard Analysis

Impacts regarding the potential increase of hazards due to a geometric design feature generally relate to the design of access points to and from [a] project site, and may include safety, operational, or capacity impacts. Impacts can be related to vehicle/vehicle, vehicle/bicycle, or vehicle/pedestrian conflicts, as well as to operational delays caused by vehicles slowing and/or queuing to access a project site. In the case of Alternative 3, these conflicts may be created by ramp configurations or through the placement of ramps, loading areas, or intersections in areas of inadequate visibility, adjacent to bicycle or pedestrian facilities, or too close to busy or congested intersections. These impacts were evaluated for permanent conditions after Project completion.

This analysis focused upon locations where the new roadways introduce a new vehicle access point and/or driveways to the site. The following four locations that would access the Project site from the public right-of-way and that may be affected by Alternative 3 driveways and infrastructure are:

- Century Boulevard and Jetway Boulevard
- Sepulveda Boulevard and 96th Street
- Sepulveda Boulevard and Century Boulevard
- Sepulveda Boulevard south of World Way

Based on the proposed infrastructure, level of existing activity, and anticipated level of activity attributable to the proposed Project, the proposed Project would not substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) and would comply with City design standards. Moreover, the land uses associated with Alternative 3 (i.e., roadway improvements and Terminal 9) would not be incompatible with existing land uses in the Project area, which consist of airport and commercial uses. For these reasons, the impact would be ***less than significant.***

Freeway Safety Analysis

The LADOT interim guidance for freeway safety analysis applied to the proposed Project, described in Section 4.8.5.5.1, was also used to assess freeway safety impacts relative to Alternative 3. This alternative has similar passenger levels of activity and a lower number of total employees relative to the proposed Project; therefore, Alternative 3 would generate less trips on a daily basis than the proposed Project. As a result, it is anticipated that the vehicle trips on freeway off-ramps would be less than the proposed Project. Therefore, as with the proposed Project, Alternative 3 would not have a substantial effect at the analyzed location or have a negative effect on traffic safety.

Overall, implementation of Alternative 3 would have a ***less than significant impact*** relative to hazards, as would also be the case for the proposed Project.

5.5.3.8.4 Cumulative Impacts

Cumulative Impacts Associated with Plans, Programs, Ordinances, and Policies

The cumulative impacts of Alternative 3 related to plan consistency would be consistent with those of the proposed Project, as described in Section 4.8.6.1, which would be ***less than significant.***

Cumulative Impacts Associated with VMT

Alternative 3 would have 3,228 new employees for Terminal 9 (less than the proposed Project due to the elimination of Concourse 0). The measure for employee VMT is efficiency based, and implementation of the VMT reduction strategies presented in Section 4.8.5.2.2 would reduce the project-related VMT per employee for Alternative 3 to a level that is 15 percent or more below the Projected Future Conditions Baseline VMT; specifically, mitigation would reduce the VMT per employee to 20.4 or less. Therefore, similar to the proposed Project, no cumulative impact would occur relative to employment VMT.

The level of passenger activity for Alternative 3 is consistent with the proposed Project. Therefore, for passenger VMT, cumulative impacts of Alternative 3 would be ***significant and unavoidable,*** similar to the proposed Project as described in Section 4.8.6.2**.**

The roadway improvements under Alternative 3 and the proposed Project are similar. Therefore, the cumulative induced VMT impacts would also be consistent with those of the proposed Project and, as such, would have a ***significant and unavoidable impact***

Overall, it is anticipated that there would be significant cumulative impacts related to VMT and that the proposed Alternative 3 would have a ***cumulatively considerable contribution*** to that impact.

Cumulative Impacts Associated with Hazards

The cumulative impacts of Alternative 3 related to hazards would be consistent with those of the proposed Project as described in Section 4.8.6.3. Such impacts would be ***less than significant*** for both Alternative 3 and the proposed Project.

5.5.3.9 Utilities

5.5.3.9.1 Water Supply

5.5.3.9.1.1 Construction

Alternative 3 would include construction of all the proposed Project components, with the exception of Concourse 0 and its associated facilities. This alternative would require the same conveyance improvements for Terminal 9 that would be necessary under the proposed Project. Water use during construction of Alternative 3 would be less than water use during construction of the proposed Project based on the lower level of development under this alternative. As with the proposed Project, construction of Alternative 3 would result in ***less than significant*** impacts on water supply and infrastructure.

5.5.3.9.1.2 Operations

Operation of this alternative would not require water for Concourse 0 landscaping, the Concourse 0 cooling tower, or operations and maintenance (e.g., cleaning) of the facility. Therefore, water demand from operation of the Alternative 3 facilities would be less than the proposed Project. Water demand associated with increased passenger activity under Alternative 3 would be the same as under the proposed Project. Because a large portion of the future water demand would be associated with increased passenger activity, water demand under Alternative 3 would only be marginally lower than under the proposed Project. Since sufficient water supplies would be available, as with the proposed Project, operation of Alternative 3 would result in ***less than significant*** impacts on water supply and infrastructure.

5.5.3.9.1.3 Cumulative

Alternative 3 would include the construction and operation of all proposed Project components except for Concourse 0. As discussed above, construction and operation of Alternative 3 would have a lower impact on water supply than the proposed Project. As discussed in Section 4.9.1, *Water Supply*, the

proposed Project would have a cumulatively less than significant impact on water supply. Because the proposed Project would have a less than significant cumulative impact on water supply, and because Alternative 3 would have a lower impact on water supply than the proposed Project, the cumulative impacts from Alternative 3 on water supply would be ***less than significant***.

5.5.3.9.2 Wastewater Generation

5.5.3.9.2.1 Construction

Since Alternative 3 would not include Concourse 0, this alternative would avoid the conveyance improvements needed to provide service connections for Concourse 0. Wastewater generation during construction of Alternative 3 would be lower than wastewater generation during construction of the proposed Project based on the lower level of development under this alternative. As with the proposed Project, construction of Alternative 3 would result in ***less than significant*** impacts on wastewater conveyance and treatment capacity.

5.5.3.9.2.2 Operations

Operation of Alternative 3 would not result in wastewater generation by new employees at Concourse 0; however, wastewater generation associated with increased passenger activity under Alternative 3 would be the same as under the proposed Project. Because the majority of future wastewater generation would be associated with increased passenger activity, wastewater generation under Alternative 3 would only be marginally lower than under the proposed Project. Since sufficient wastewater treatment capacity would be available, as with the proposed Project, operation of Alternative 3 would result in ***less than significant*** impacts on wastewater conveyance and treatment capacity.

5.5.3.9.2.3 Cumulative

Alternative 3 would include the construction and operation of all proposed Project components except for Concourse 0. As discussed above, construction and operation of Alternative 3 would have a lower impact on wastewater than the proposed Project. As discussed in Section 4.9.2, *Wastewater Generation*, the proposed Project would have a cumulatively less than significant impact on wastewater. Because the proposed Project would have a less than significant cumulative impact on wastewater, and because Alternative 3 would have a lower impact on wastewater than the proposed Project, the cumulative impacts from Alternative 3 on wastewater would be ***less than significant***.

5.5.4 Alternative 4: Approved LAMP Roadway Improvements plus Terminal 9 Access

5.5.4.1 Air Quality and Human Health Risk

5.5.4.1.1 Air Quality

5.5.4.1.1.1 Construction

Emissions

Alternative 4 would include construction of all the proposed Project components except for the proposed roadway improvements. In lieu of these improvements, the LAMP Phase 2 roadways with modifications to provide access to Terminal 9 would be constructed. As discussed in Section 4.1.1, *Air Quality*, temporary runway closures during construction of the proposed Project would result in short-term significant and unavoidable construction-related emissions of CO, VOC, NO_X, and SO_X. Construction activities associated with the proposed Project would also result in significant and unavoidable emissions of NO_X that would extend for the duration of the construction period. The short-term impacts caused by temporary runway

closures would occur under both the proposed Project and Alternative 4. With respect to impacts from ongoing construction activities, emissions of CO, VOC, NO_X, SO_X, PM_{10}, and $PM_{2.5}$ from the construction of the LAMP Phase 2 roadways are expected to be less than, but very similar to, those of the proposed Project roadways. The LAMP Phase 2 roadways would have slightly fewer linear miles and none of the elevated roadways included in the proposed Project. Because emission thresholds are relative to peak daily construction emissions, which in the case of the proposed Project and Alternative 4 would be driven by the temporary runway closures, the implementation of the LAMP Phase 2 roadways in lieu of the proposed roadways would be expected to result in a relatively minor differences to peak daily emissions. As discussed in Section 4.1.1, *Air Quality*, the proposed Project would result in significant and unavoidable construction-related emissions of CO, VOC, NO_X, and SO_X. As with the proposed Project, CO, VOC, NO_X, and SO_X regional emissions from the construction of Alternative 4 would be ***significant and unavoidable***.

Concentrations

The proposed Project would result in a less than significant impact with respect to localized concentrations of CO, NO_2, SO_2, PM_{10}, and $PM_{2.5}$ during construction. Alternative 4 would involve construction of the airfield improvements, Concourse 0, and Terminal 9, which are proposed under the Project. However, in place of the proposed Project's roadway improvements, Alternative 4 would implement the LAMP Phase 2 roadway improvements. It is expected that construction-related emissions associated with the LAMP Phase 2 roadways would be lower than those of the proposed roadways. Because the LAMP Phase 2 roadways would be constructed in the same general location as the proposed roadways and construction-related emissions would be lower, localized concentrations would also be lower. Therefore, as with the proposed Project, construction-related impacts of criteria air pollutants under Alternative 4 would be ***less than significant***.

5.5.4.1.1.2 Operations

Emissions

Alternative 4 would include all of the proposed Project components except that it would implement LAMP Phase 2 roadway improvements in place of the proposed Project roadway improvements. As discussed in Section 4.1.1, *Air Quality*, operation of the proposed Project would result in significant and unavoidable regional emissions of NO_X, SO_X, PM_{10}, and $PM_{2.5}$. These operations-related emissions would be driven by increased aircraft activity that would occur irrespective of the Project. Although Alternative 4 has a different roadway system than the proposed Project, regional traffic emissions are anticipated to be comparable between the scenarios. Thus, as with the proposed Project, it is expected that operations-related impacts of Alternative 4 with respect to regional emissions of NO_X, SO_X, PM_{10}, and $PM_{2.5}$ would be ***significant and unavoidable***.

Concentrations

The proposed Project would result in significant and unavoidable localized concentrations of PM_{10}. As discussed in Section 4.1.1, *Air Quality*, localized concentrations of PM_{10} would be driven by road dust from traffic and significant localized concentrations would occur within the ITF West facility and along the roadways leading to that facility, along 98th Street and Aviation Boulevard at the entrance to the CONRAC, and at the location of the new CTA entry roadway under the proposed Project. Alternative 4 differs from the proposed Project in that Alternative 4 includes the LAMP Phase 2 roadway system, which would increase traffic flows to the CONRAC and ITF West. Under Alternative 4, it is anticipated that localized concentrations of PM_{10} at the location of the CTA entry roadway system would be less than significant. Near the intersection of 96th Street and Airport Boulevard, the peak localized concentration location, daily traffic volumes would be expected to decrease by 9 percent under Alternative 4 as compared to the proposed Project, thereby resulting in a similar decrease in localized concentrations of PM_{10} from road

dust in that area. Traffic volume increases at the peak location were estimated by summing modeled traffic volumes for the roadway links which make up the peak intersection under the Alternative 4 and comparing them against the summed modeled traffic volumes for the roadway links which make up the peak intersection under proposed Project. Detailed calculations are provided in **Appendix C.7** of this EIR. This reduction would result in a peak localized concentration under Alternative 4 that would be lower than that of the proposed Project but would remain above the operational thresholds for PM_{10}. Therefore, it is expected that Alternative 4, would result in ***significant and unavoidable*** localized concentrations of PM_{10}.

As shown in Table 4.1.1-14, localized concentrations of CO, NO_2, SO_2, and $PM_{2.5}$ associated with the proposed Project would be less than significant when compared to baseline conditions. Localized concentrations of CO, NO_2, and SO_2 are driven by emissions from aircraft operations, which would be virtually indistinguishable under Alternative 4 as compared to the proposed Project. Localized concentrations of $PM_{2.5}$ are driven by vehicle traffic, which would be lower at peak locations under Alternative 4 as compared to the proposed Project. Therefore, as with the proposed Project, it is expected that operational impacts from Alternative 4 with respect to local effects of the emissions of CO, NO_2, SO_2, and $PM_{2.5}$ would be ***less than significant***.

5.5.4.1.1.3 Cumulative

Alternative 4 would include the construction and operation of all proposed Project components, except that it would implement the approved LAMP Phase 2 roadway improvements in place of the proposed Project roadway improvements. As discussed above, construction of Alternative 4 would result in a slightly lower, but very similar, impact on air quality than the proposed Project; similarly, operation of Alternative 4 would have a lower, but similar, impact on air quality than the proposed Project. As discussed in Section 4.1.1, *Air Quality*, the proposed Project would have a cumulatively significant and unavoidable impact on air quality. Because the proposed Project would have a significant and unavoidable cumulative impact on air quality, and because Alternative 4 would have a slightly lower but similar impact on air quality than the proposed Project, the cumulative impacts from Alternative 4 on air quality would be ***significant and unavoidable***.

5.5.4.1.2 Human Health Risk

5.5.4.1.2.1 Construction

Alternative 4 would include construction of all the proposed Project components except for the proposed roadway improvements, instead implementing the approved LAMP Phase 2 roadways with modifications to provide access to Terminal 9. Since the LAMP Phase 2 roadways are not as extensive as those for the proposed Project, slightly less construction would occur under Alternative 4 than under the proposed Project, with a resulting decrease in construction emissions. As with the proposed Project, construction-related impacts to human health from TAC under Alternative 4 would be ***less than significant***.

5.5.4.1.2.2 Operations

Alternative 4 would include all of the airfield improvements proposed under the Project, except that it would implement the approved LAMP Phase 2 roadway improvements in place of the proposed Project roadway improvements. Although Alternative 4 has a different roadway system than the proposed Project, regional traffic emissions under Alternative 4 are anticipated to be comparable to the proposed Project; therefore, TAC concentrations at sensitive receptors under Alternative 4 are expected to be similar to the proposed Project. As with the proposed Project, operations-related impacts to human health from TAC under Alternative 4 would be ***less than significant***.

5.5.4.1.2.3 Cumulative

Alternative 4 would include the construction and operation of all proposed Project components, except that it would implement the approved LAMP Phase 2 roadway improvements in place of the proposed Project roadway improvements. Although Alternative 4 has a different roadway system than the proposed Project, emissions from construction and operation of Alternative 4 are anticipated to be comparable to the proposed Project. TAC concentrations at sensitive receptors under Alternative 4 are anticipated to be similar to the proposed Project. As discussed in Section 4.1.2, *Human Health Risk*, the proposed Project would have a cumulatively less than significant impact on human health risk. Therefore, as with the proposed Project, the cumulative impacts from Alternative 4 on human health risk would be ***less than significant***.

5.5.4.2 Cultural Resources (Historical Resources)

5.5.4.2.1 Construction

Alternative 4 proposes the construction of all proposed Project components with the exception of the proposed roadway improvements, instead implementing the LAMP Phase 2 roadways, with modifications to provide access to Terminal 9. As with the proposed Project, construction of Alternative 4 would not require demolition or alteration of any of the four properties that have been identified as eligible for historic listing in the near vicinity of the Project site (i.e., the 1961 ATCT, the former McCulloch Building, the former Union Savings and Loan building, and the former Aircraft School Building). As with the proposed Project, construction of Alternative 4 would not cause a substantial adverse change in the significance of a historical resource pursuant to State CEQA Guidelines Section 15064.5 and impacts on historical resources would be ***less than significant***.

5.5.4.2.2 Operations

Alternative 4 would include Concourse 0 and Terminal 9 and its associated facilities. The landside improvements associated with the proposed Project would not be implemented; instead, the LAMP Phase 2 roadways would be constructed, with modifications to provide access to Terminal 9. Impacts to historical resources associated with Alternative 4 are summarized in Table 5-3. Under this alternative, new roadways would be constructed immediately to the south and east of the McCulloch Building, similar in nature to the roadways that would be constructed under the proposed Project. Roadways would also be constructed in proximity to the ATCT. Impacts to the McCulloch Building and to the ATCT would be the same as under the proposed Project. For both resources, the proposed improvements would alter the immediate surroundings of the historical buildings, but not to a level that would result in a significant impact. Although Concourse 0 would alter the surroundings of the former Aircraft School Building, the roadway improvements under Alternative 4 would be less intrusive to this historical resource as compared to the proposed Project. Similarly, although Concourse 0 would alter the surroundings of the Union Savings and Loan building, the roadway improvements would not; therefore, the overall alteration would be less than under the proposed Project. As with the proposed Project, impacts from operation of Alternative 4 on historical resources would be ***less than significant***.

5.5.4.2.3 Cumulative

Alternative 4 would include the construction and operation of all proposed Project components, except that it would implement the approved LAMP Phase 2 roadway improvements in place of the proposed Project roadway improvements. As discussed above, Alternative 4 would have a lower impact on historical resources than the proposed Project. As discussed in Section 4.2, *Cultural Resources (Historical Resources)*, the proposed Project would have a cumulatively less than significant impact on historical resources. Because the proposed Project would have a less than significant cumulative impact on historical

resources, and because Alternative 4 would have a lower impact on historical resources than the proposed Project, the cumulative impacts from Alternative 3 on historical resources would be ***less than significant***.

5.5.4.3 Energy

5.5.4.3.1 Construction

Alternative 4 would include construction of all the proposed Project components, with the exception of the proposed roadway improvements, instead implementing the LAMP roadways with modifications to provide access to Terminal 9. Energy use during construction of Alternative 4 would generally be the same as the proposed Project as the level of development would be similar. Construction would comply with applicable plans and policies, including those related to building energy use and fuel efficiency. As a result, construction of this alternative would not result in wasteful, inefficient, or unnecessary consumption of energy resources, nor would it conflict with or obstruct a state or local plan for renewable energy or energy efficiency. As with the proposed Project, construction of Alternative 4 would result in ***less than significant*** impacts on energy resources.

5.5.4.3.2 Operations

Energy demand under Alternative 4 would generally be the same as the proposed Project because it would require operating the same energy-consuming facilities as the proposed Project, and fuel consumption associated with aircraft, APUs, GSE, and passenger and employee trips would generally be the same. Operation of Alternative 4 would result in slightly less demand for vehicle-related fuels due to the lower number of added lane miles associated with the LAMP Phase 2 roadways as compared to the proposed Project roadway improvements. State and local plans pertaining to building, lighting, and fuel efficiency would apply to Alternative 4; therefore, operation of Alternative 4 would not result in wasteful, inefficient, or unnecessary consumption of energy resources, nor would it conflict with or obstruct a state or local plan for renewable energy or energy efficiency. As with the proposed Project, operation of Alternative 4 would result in ***less than significant*** impacts on energy resources.

5.5.4.3.3 Cumulative

Alternative 4 would include the construction and operation of all proposed Project components, except that it would implement the approved LAMP Phase 2 roadway improvements in place of the proposed Project roadway improvements. As discussed above, construction and operation of Alternative 4 would have a lower impact on energy resources than the proposed Project. As discussed in Section 4.3, *Energy*, the proposed Project would have a cumulatively less than significant impact on energy resources. Because the proposed Project would have a less than significant cumulative impact on energy resources, and because Alternative 4 would have a lower impact on energy resources than the proposed Project, the cumulative impacts from Alternative 4 on energy resources would be ***less than significant***.

5.5.4.4 Greenhouse Gas Emissions

5.5.4.4.1 Construction and Operations

Alternative 4 would include construction of all the proposed Project components except for the proposed roadway improvements, instead implementing the LAMP Phase 2 roadways with modifications to provide access to Terminal 9. Changes in construction-related GHG emissions from changes to the roadways are expected to be minor and, thus, GHG emissions would be similar to the proposed Project. As with the proposed Project, GHG emissions from the construction of Alternative 4 would result in a net increase in GHG emissions over baseline conditions.

Changes in operational GHG emissions from changes to the roadways are expected to be minor and, thus, GHG emissions would be similar to the proposed Project. As with the proposed Project, GHG emissions

from the airport operation under Alternative 4 would result in a net increase in GHG emissions over baseline conditions.

The amortized construction emissions combined with operational emissions under Alternative 4 would result in total annual emissions of GHGs that would result in a net increase over baseline conditions. Therefore, as with the proposed Project, impacts of GHG emissions from Alternative 4 would be ***significant and unavoidable***.

5.5.4.4.2 Cumulative

Alternative 4 would include the construction and operation of all proposed Project components, except that it would implement the approved LAMP Phase 2 roadway improvements in place of the proposed Project roadway improvements. As discussed above, construction and operation of Alternative 4 would have a similar impact on GHG emissions than the proposed Project. As discussed in Section 4.4, *Greenhouse Gas Emissions*, implementation of the proposed Project would result in a cumulatively significant and unavoidable impact on GHG emissions and the contribution of Alternative 2 to this impact would be ***cumulatively considerable***. Because the proposed Project would have a significant and unavoidable cumulative impact on GHG emissions, and because Alternative 4 would have a similar impact on GHG emissions as the proposed Project, the cumulative impacts with implementation of Alternative 4 on GHG emissions would be significant and unavoidable and the contribution of Alternative 4 to this impact would be ***cumulatively considerable***.

5.5.4.5 Hazardous Materials

5.5.4.5.1 Construction

Alternative 4 would include construction of all proposed Project components, with the exception of the proposed roadway improvements, instead implementing the LAMP Phase 2 roadways with modifications to provide access to Terminal 9. As a result, as shown in Table 5-4, Alternative 4 would have the same impacts as the proposed Project on the Terminal 1 Fuel Valve Vault site, the UAL MOC, and the PFAS area of interest. Moreover, Concourse 0 and LAMP Phase 2 roadways would have the same impacts on the AlliedSignal/Honeywell as the proposed Project. Therefore, as with the proposed Project, construction of Alternative 4 would result in a ***less than significant impact*** related to hazardous materials.

5.5.4.5.2 Operations

Operations under Alternative 4 would not involve excavation, extraction of groundwater, or any activity that could damage or physically interfere with ongoing or future contamination monitoring or remediation activities at the listed sites. As such, as with the proposed Project, operation of Alternative 4 would have ***no impact*** related to hazardous materials.

5.5.4.5.3 Cumulative

Alternative 4 would include the construction and operation of all proposed Project components, except that it would implement the approved LAMP Phase 2 roadway improvements in place of the proposed Project roadway improvements. As discussed above, construction and operation of Alternative 4 would have a lower impact on hazardous materials than the proposed Project. As discussed in Section 4.5, *Hazardous Materials*, the proposed Project would have a cumulatively less than significant impact on hazardous materials. Because the proposed Project would have a less than significant cumulative impact on hazardous materials, and because Alternative 4 would have a lower impact on hazardous materials than the proposed Project, the cumulative impacts from Alternative 4 on hazardous materials would be ***less than significant***.

5.5.4.6 Land Use and Planning

5.5.4.6.1 Construction and Operations

Alternative 4 would include construction and operation of all proposed Project components, with the exception of the proposed roadway improvements, instead implementing the LAMP roadways with modifications to provide access to Terminal 9. Although this alternative would include the proposed APM station, the proposed LAMP Phase 2 roadway system would not advance regional and local policies aimed at transportation to the same extent as the proposed Project. However, this would not cause significant environmental impacts due to inconsistencies with these policies. As described in Sections 5.5.2.4.1 and 5.5.4.4 above, GHG and vehicle emissions under this alternative would increase compared to existing baseline conditions, although to a slightly lesser extent than the proposed Project. However, as with the proposed Project, Alternative 4 would comply with the overall intent of these land use plans and Alternative 4 would result in ***less than significant*** impacts to land use and planning.

5.5.4.6.2 Cumulative

Alternative 4 would include the construction and operation of all proposed Project components, except that it would implement the approved LAMP Phase 2 roadway improvements in place of the proposed Project roadway improvements. As discussed above, construction and operation of Alternative 4 would have a lower impact on land use policies concerning GHG and vehicle emissions than the proposed Project. As discussed in Section 4.6, *Land Use and Planning*, the proposed Project would have a cumulatively less than significant impact on land use. Because the proposed Project would have a less than significant cumulative impact on land use, and because Alternative 4 would have a lower impact on land use than the proposed Project, the cumulative impacts from Alternative 4 on land use would be ***less than significant***.

5.5.4.7 Noise

5.5.4.7.1 Aircraft Noise

5.5.4.7.1.1 Construction

Alternative 4 would include construction of all the airfield improvements, including the proposed modifications to the runway exits. As with the proposed Project, this alternative would require temporary runway closures in 2023 and 2024, which would result in temporary changes in aircraft noise exposure levels in nearby areas. As with the proposed Project, for some noise-sensitive land uses, the temporary increase in aircraft noise during construction of Alternative 4 would result in a short-term (i.e., 4.5-month) ***significant and unavoidable impact***.

5.5.4.7.1.2 Operations

Future aircraft activity under Alternative 4 would be the same as under the proposed Project; therefore, future aircraft noise impacts would be the same under both. As with the proposed Project, aircraft operations under Alternative 4 would increase the area that would be subject to elevated aircraft noise levels (i.e., higher than 65 dBA CNEL), which would expose additional residences and other noise-sensitive uses to aircraft noise that exceed the threshold of significance. As with the proposed Project, even with implementation of the proposed mitigation measure (MM-AN (ATMP)-1, Sound Insulation Programs), impacts associated with aircraft noise under Alternative 4 would be ***significant and unavoidable.***

5.5.4.7.1.3 Cumulative

As discussed in Section 4.7.1, *Aircraft Noise*, none of the development projects identified in Chapter 3, *Overview of Project Setting,* would have aircraft operations that could contribute to cumulative aircraft noise impacts. Therefore, cumulative impacts from aircraft noise under the proposed Project would be less than significant (i.e., although aircraft noise impacts associated with the proposed Project, alone, would be significant and unavoidable, there are no other projects involving aircraft activity; hence there is no *cumulative* aircraft noise and there would not be a significant cumulative impact). The lack of other projects that contribute to cumulative aircraft noise impacts applies to Alternative 4 in the same way as the proposed Project. As with the proposed Project, under Alternative 4, cumulative impacts associated with aircraft noise would be ***less than significant***.

5.5.4.7.2 Roadway Traffic Noise

5.5.4.7.2.1 Operations

Under Alternative 4, in place of the proposed roadway improvements, Alternative 4 would implement the already-approved LAMP Phase 2 roadway improvements. For the most part, roadway traffic associated with the LAMP Phase 2 roadways would be located on alignments similar to those of the proposed Project with respect to nearby noise-sensitive receptors. The exception is that, under Alternative 4, the extensive roadway improvements north of 98th Street, which would consist of parallel elevated ramps, would not occur. As a result, traffic volumes on roadways in the vicinity of 98th Street would be lower under Alternative 4 as compared to the proposed Project. The improvements north of 98th Street that would occur under the proposed Project would be located at a slightly greater distance from nearby noise-sensitive receptors, which are on the south side of 98th Street. Nevertheless, due to the higher traffic volumes, it is expected that the proposed Project would have greater impacts to noise-sensitive receptors along 98th Street from roadway noise than would Alternative 4. With respect to other roadways, essentially the same amount of traffic would move through the area roadways under Alternative 4 as that for the proposed Project. For these reasons, the roadway traffic noise levels on the local roadway network projected for 2028 and the associated increases in roadway traffic noise compared to baseline conditions would not be materially different between Alternative 4 and the proposed Project. As with the proposed Project, impacts under Alternative 4 would be ***less than significant***.

5.5.4.7.2.2 Cumulative

As discussed above, Alternative 4 would have a materially similar impact on roadway traffic noise as the proposed Project. As discussed in Section 4.7.2, *Roadway Traffic Noise*, the proposed Project would have a less than significant cumulative impact on roadway traffic noise. Because the proposed Project would have a less than significant cumulative impact on roadway traffic noise, and because Alternative 4 would have a similar impact on roadway traffic noise as the proposed Project, the cumulative impacts from Alternative 4 on roadway traffic noise would be ***less than significant***.

5.5.4.7.3 Construction Traffic and Equipment Noise and Vibration

5.5.4.7.3.1 Construction

Alternative 4 would include construction of all the proposed Project components with the exception of the roadway improvements. Instead of constructing the roadway improvements proposed under the proposed Project, Alternative 4 would implement the LAMP Phase 2 roadways, but would modify the roadways to provide access to Terminal 9. As with the proposed Project, construction of Alternative 4 would result in construction noise associated with airfield improvements, roadway improvements, and Concourse 0 and Terminal 9 construction. Alternative 4 would have a similar level of construction as the proposed Project. Therefore, peak daily construction trips would be similar, and construction traffic noise

would generally be the same as the proposed Project. As with the proposed Project, impacts related to construction traffic noise would be less than significant. Construction activities associated with the LAMP Phase 2 roadways would be located in proximity to the same historical resources as the proposed Project. In particular, construction activities would generally be the same distance from the most noise-sensitive use, the former Aircraft School Building, as the proposed Project. As with the proposed Project, impacts to this building, and to the other historical resources, from construction equipment vibration would be ***less than significant***.

As with the proposed Project, construction of the airfield improvements, roadways, and Terminal 9 would generate noise from construction equipment. The potential noise impacts from each construction activity on the nearest noise-sensitive receptors are shown in **Table 5-13**. As explained above in Section 5.5.1.7.3, the noise levels shown in the table are very conservative; actual construction-related noise levels associated with Alternative 4 would be lower than those identified in Table 5-13. Instead of constructing the roadway improvements proposed under the proposed Project, Alternative 4 would implement the LAMP Phase 2 roadways, but would modify the roadways to provide access to Terminal 9. The LAMP Phase 2 roadways do not include improvements on 98th Street. As shown in Table 5-5 and Table 5-13, implementation of the LAMP Phase 2 roadways in lieu of the proposed Project roadways would not avoid any of the significant impacts associated with the proposed Project at any Receptor Sites; however, Alternative 4 would reduce, but not avoid, significant impacts associated with the proposed Project at one Receptor Site (R11 Courtyard Los Angeles LAX/Century Boulevard). As shown in Table 5-13, implementation of Alternative 4 would result in construction noise levels above the threshold of significance at several noise-sensitive receptors due to the construction of Terminal 9, Concourse 0, and the roadway improvements, as well as from the combined construction activities. As with the proposed Project, Mitigation Measures MM-N (ATMP)-1, Construction Noise Control Plans, MM-N (ATMP)-2, Construction Scheduling, and MM-N (ATMP)-3, Construction Equipment, would reduce impacts associated with construction traffic and equipment noise under Alternative 4 to a level that is ***less than significant.***

Noise associated with the use of staging areas for Alternative 4 would be the same as the proposed Project (see Table 4.7.3-6). As with the proposed Project, impacts would be ***less than significant***.

5.5.4.7.3.2 Cumulative

As discussed above, Alternative 4 would have a materially similar impact on construction traffic and equipment noise and vibration than the proposed Project. As discussed in Section 4.7.3, *Construction Traffic and Equipment Noise and Vibration*, the proposed Project would have a less than significant cumulative impact on construction traffic and equipment noise and vibration. Because the proposed Project would have a less than significant cumulative impact on construction traffic and equipment noise and vibration, and because Alternative 4 would have a materially similar impact on construction traffic and equipment noise and vibration than the proposed Project, the cumulative impacts from Alternative 4 on construction traffic and equipment noise and vibration would be ***less than significant***.

Table 5-13
Construction Noise Levels at Noise-Sensitive Receptor Sites - Alternative 4

ID	Receptor	Background Conditions[1] CNEL (dBA)	Distance from Construction Activity (feet)	Construction Activity	Construction Equipment CNEL (dBA)	Total[2] CNEL (dBA)	Significance Threshold[3]	Above Threshold?
R1	Residential development in Playa del Rey	67.8	3,200	Airfield improvements	60.5	68.5	72.8	No
R2	Saint Bernard High School	67.7	2,500	Airfield improvements	62.6	68.9	72.7	No
R3	Residential development along southern edge of Westchester	68.4	1,500	Airfield improvements	67.1	70.8	73.4	No
R4	Park West Apartments on Lincoln Boulevard	66.3	1,200	Airfield improvements	69.0	70.9	71.3	No
R5	Residential uses along West 88th Street near Liberator Ave	67.9	2,500	Airfield improvements	62.6	69.0	72.9	No
R6	Residential uses near Westchester Parkway and Kittyhawk Ave	72.0	1,750	Airfield improvements	65.7	72.9	77.0	No
		72.0	2,850	Terminal (C0) construction	61.9	72.4	77.0	No
		72.0	1,600	Roadway construction	66.9	73.2	77.0	No
		72.0	NA	Combined airfield improvements and roadway construction	70.1	74.2	77.0	No
R7	Residence Inn by Marriott Los Angeles LAX/Century Boulevard	70.2	2,900	Terminal (C0) construction	61.7	70.9	75.2	No
		70.2	900	Terminal (T9) construction	71.9	74.1	75.2	No
		70.2	900	Roadway construction	71.9	74.1	75.2	No
		70.2	NA	Combined terminal (C0 and T9) and roadway construction	75.1	76.3	75.2	Yes[4]

Table 5-13
Construction Noise Levels at Noise-Sensitive Receptor Sites - Alternative 4

ID	Receptor	Background Conditions[1] CNEL (dBA)	Distance from Construction Activity (feet)	Construction Activity	Construction Equipment CNEL (dBA)	Total[2] CNEL (dBA)	Significance Threshold[3]	Above Threshold?
R8	Sheraton Gateway Los Angeles Hotel	69.3	1,600	Terminal (C0) construction	66.9	71.3	74.3	No
		69.3	300	Terminal (T9) construction	81.4	81.7	74.3	Yes[4]
		69.3	100	Roadway construction	91.0	91.0	74.3	Yes[4]
		69.3	NA	Combined terminal (C0 and T9) and roadway construction	91.5	91.5	74.3	Yes[4]
R9	H Hotel Los Angeles/ Homewood Suites by Hilton Los Angeles International Airport	70.4	1,200	Terminal (C0) construction	69.4	72.9	75.4	No
		70.4	250	Terminal (T9) construction	83.3	83.3	75.4	Yes[4]
		70.4	55	Roadway construction	96.2	96.2	75.4	Yes[4]
		70.4	NA	Combined terminal (C0 and T9) and roadway construction	96.4	96.4	75.4	Yes[4]
R10	Hyatt Regency Los Angeles International Airport	73.4	350	Terminal (C0) construction	80.1	80.9	78.4	Yes[4]
		73.4	550	Terminal (T9) construction	76.2	78.0	78.4	No
		73.4	150	Roadway construction	87.5	87.7	78.4	Yes[4]
		73.4	NA	Combined terminal (C0 and T9) and roadway construction	88.5	88.6	78.4	Yes[4]

Table 5-13
Construction Noise Levels at Noise-Sensitive Receptor Sites - Alternative 4

ID	Receptor	Background Conditions[1] CNEL (dBA)	Distance from Construction Activity (feet)	Construction Activity	Construction Equipment CNEL (dBA)	Total[2] CNEL (dBA)	Significance Threshold[3]	Above Threshold?
R11	Courtyard Los Angeles LAX/Century Boulevard	71.7	1,000	Terminal (C0) construction	71.0	74.4	76.0	No
		71.7	600	Terminal (T9) construction	75.4	76.9	76.0	Yes[4]
		71.7	350	Roadway construction	73	75.4	76.0	No
		71.7	NA	Combined terminal (C0 and T9) and roadway construction	77.4	78.4	76.0	Yes[4]

Source: HMMH, CDM Smith, 2020.

Notes:
1 Background condition obtained through AEDT using 24-hour CNEL dBA.
2 Background plus Alternative 4 construction noise.
3 Significance Threshold = Background CNEL + 5 dBA
4 Construction equipment noise levels conservatively assume all equipment would be utilized at the same time and at all hours of the 24-hour day, both of which are unlikely.

Key:
C0 = Concourse 0; T9 = Terminal 9

5.5.4.8 Transportation

5.5.4.8.1 Plans, Programs, Ordinances, and Policies Analysis

Consistent with the methodology used in Section 4.8.5.1.1 for the proposed Project, a review was conducted to determine whether Alternative 4 would conflict with a transportation-related City or regional plan, program, ordinance, or policy addressing the circulation system (including transit, roadways, bicycle, and pedestrian facilities) that was adopted to protect the environment. Transportation policies or standards adopted to protect the environment include those that support multimodal transportation options and a reduction in VMT. Similar to what was discussed in Table 4.8-11 and Table 4.8-12 for the proposed Project, Alternative 4's relationship to transportation-related plans, policies, ordinances, and programs would not result in significant impacts to the environment. Those similarities include, but are not limited to, the relationship to the adopted SCAG 2020-2045 RTP/SCS. The 2020-2045 RTP/SCS recognizes the LAX Landside Access Modernization Program as providing for ground transportation system improvements at LAX, and the RTP/SCS also recognizes the proposed Project as providing for ground transportation system improvements. While LAX Landside Access Modernization Program Phase 1 roadway improvements are included in the RTP/SCS, the Phase 2 roadway improvements, which are a key element of Alternative 4, are not included in the RTP/SCS, but could be added at a future time. That is also the case for the roadway improvements associated with the proposed Project. Overall, Alternative 4would not be inconsistent with transportation-related plans, policies, ordinances, and programs, and the impact of Alternative 4 would be ***less than significant***, as would also be the case for the proposed Project.

5.5.4.8.2 VMT Analysis

Alternative 4 was analyzed by modifying the LAX Travel Demand Model (that was developed and calibrated for the proposed Project) to account for all the transportation elements of Alternative 4. The methodology to calculate VMT impacts is consistent with the methodology described in Section 4.8.2 for the proposed Project VMT analysis. The travel demand model is used to calculate VMT per employee, total passenger VMT and induced VMT. The results of the passenger and employee VMT analysis are presented in **Table 5-14.**

Table 5-14
Alternative 4 Passenger and Employee VMT

Measure	Projected Future Conditions Baseline	Proposed Project	Alternative 4
VMT per Employee	24.0	23.9	23.9
Total Passenger VMT	8,676,209	8,708,995	8,692,322
Source: Fehr and Peers, 2020.			

Alternative 4 would result in 4,700 new employees associated with Concourse 0 Terminal 9, consistent with the proposed Project. As shown in Table 5-14, the VMT per employee under Alternative 4 would not be 15 percent below the baseline (i.e., 20.4), which is the threshold of significance. Because Alternative 4 would generate VMT per employee that would exceed 15 percent below the Projected Future Conditions Baseline VMT per employee rate, this would be a ***significant impact***, which would also be the case for the proposed Project. However, with implementation of similar mitigation as proposed in Section 4.8.5.2.2, the impact related to employment VMT for Alternative 4 would be reduced to a ***less than significant*** level, as is also the case for the proposed Project.

Alternative 4 would result in a net increase of 16,123 total passenger VMT over the 2028 Projected Future Conditions Baseline. Alternative 4 would result in a VMT increase of 0.19 percent over baseline conditions

compared to a 0.37 percent increase associated with the proposed Project. Although the magnitude of the impact under Alternative 4 is less than that of the proposed Project (Project's net increase in total passenger VMT is 32,786), passenger-related VMT would still be a ***significant impact***. Even with implementation of the mitigation package for the proposed Project as described in Section 4.8.5.2.2, the passenger VMT impact would remain a ***significant and unavoidable impact*****,** which would also be the case for the proposed Project.

The LAX Landside Access Modernization Program Phase 2 roadway improvements and proposed Project new roadways are expected to have the same effect on induced VMT (with minimal variation), because the level of non-airport trip activities would be the same. Therefore, the short-term induced VMT impacts of Alternative 4 would be consistent with those of the proposed Project, as described in Section 4.8.5.4; hence, there would be a ***significant and unavoidable impact*** for both Alternative 4 and the proposed Project.

5.5.4.8.3 Hazard Analysis

Impacts regarding the potential increase of hazards due to a geometric design feature generally relate to the design of access points to and from [a] project site, and may include safety, operational, or capacity impacts. Impacts can be related to vehicle/vehicle, vehicle/bicycle, or vehicle/pedestrian conflicts, as well as to operational delays caused by vehicles slowing and/or queuing to access a project site. In the case of Alternative 4, these conflicts may be created by ramp configurations or through the placement of ramps, loading areas, or intersections in areas of inadequate visibility, adjacent to bicycle or pedestrian facilities, or too close to busy or congested intersections. These impacts were evaluated for permanent conditions after Project completion.

This analysis focused upon locations where the new roadways introduce a new vehicle access point and/or driveways to the site. The following four locations that would access the Project site from the public right-of-way and that may be affected by Alternative 4 driveways and infrastructure are:

- Century Boulevard and Jetway Boulevard
- Sepulveda Boulevard and 96th Street
- Sepulveda Boulevard and Century Boulevard
- Sepulveda Boulevard south of World Way

Based on the proposed infrastructure, level of existing activity, and anticipated level of activity attributable to the proposed Project, the proposed Project would not substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) and would comply with City design standards. Moreover, the land uses associated with Alternative 4 (i.e., roadway improvements, Concourse 0 and Terminal 9) would not be incompatible with existing land uses in the Project area, which consist of airport and commercial uses. For these reasons, the impact would be ***less than significant***.

Freeway Safety Analysis

The LADOT interim guidance for freeway safety analysis applied to the proposed Project, described in Section 4.8.5.5.1, was also used to assess freeway safety impacts relative to Alternative 4. This alternative has comparable passenger and employee levels of activity as the proposed Project. It is anticipated that the impacts on freeway off-ramps would, therefore, be similar to the proposed Project. Therefore, as with the proposed Project, Alternative 4 would not have a substantial effect at the analyzed location or have a negative effect on traffic safety.

Overall, implementation of Alternative 4 would have a ***less than significant impact*** relative to hazards, as would also be the case for the proposed Project.

5.5.4.8.4 Cumulative Impacts

Cumulative Impacts Associated with Plans, Programs, Ordinances, and Policies

The cumulative impacts of Alternative 4 related to plan consistency would be consistent with those of the proposed Project, as described in Section 4.8.6.1, which would be ***less than significant.***

Cumulative Impacts Associated with VMT

Alternative 4 would have 4,700 new employees as part of Concourse 0 and Terminal 9 (consistent with the proposed Project). The passenger activity forecast is also similar to the proposed Project. Therefore, the employee and passenger cumulative impacts of Alternative 4 are similar to the proposed Project as described in Section 4.8.6.2.

The LAX Landside Access Modernization Program Phase 2 roadway improvements and proposed Project new roadways are expected to have the same effect on induced VMT (with minimal variation), because the level of non-airport trip activities would be the same. Therefore, cumulative long-term induced VMT impacts of Alternative 4 would be consistent with those of the proposed Project as described in Section 4.8.6.2, and would be ***significant and unavoidable*** under both scenarios.

Overall, it is anticipated that there would be significant cumulative impacts related to VMT and that Alternative 4 would have a ***cumulatively considerable contribution*** to that impact, which would also be the case for the proposed Project.

Cumulative Impacts Associated with Hazards

The cumulative impacts of Alternative 4 related to hazards would be consistent with those of the proposed Project as described in Section 4.8.6.3. Such impacts would be ***less than significant*** for both Alternative 4 and the proposed Project.

5.5.4.9 Utilities

5.5.4.9.1 Water Supply

5.5.4.9.1.1 Construction

Alternative 4 would include construction of all the proposed Project components, with the exception of the proposed roadway improvements, instead implementing the LAMP roadways with modifications to provide access to Terminal 9. This alternative would require the same conveyance improvements for Terminal 9 that would be necessary under the proposed Project. Water use during construction of Alternative 4 would generally be the same as the proposed Project as the level of development would be similar. As with the proposed Project, construction of Alternative 4 would result in ***less than significant*** impacts on water supply and infrastructure.

5.5.4.9.1.2 Operations

Water demand from operation of Alternative 4 would be associated with the proposed buildings and passenger activity, which would not change with the replacement of the proposed roadway improvements. Since increased passenger activity under Alternative 4 would be the same as under the proposed Project, water demand from operation of Alternative 4 would be the same as the proposed Project. Because sufficient water supplies would be available, as with the proposed Project, operation of Alternative 4 would result in ***less than significant*** impacts on water supply and infrastructure.

5.5.4.9.1.3 Cumulative

Alternative 4 would include the construction and operation of all proposed Project components, except that it would implement the approved LAMP Phase 2 roadway improvements in place of the proposed Project roadway improvements. As discussed above, construction and operation of Alternative 4 would have a lower impact on water supply than the proposed Project. As discussed in Section 4.9.1, *Water Supply*, the proposed Project would have a cumulatively less than significant impact on water supply. Because the proposed Project would have a less than significant cumulative impact on water supply, and because Alternative 4 would have a lower impact on water supply than the proposed Project, the cumulative impacts from Alternative 4 on water supply would be ***less than significant***.

5.5.4.9.2 Wastewater Generation

5.5.4.9.2.1 Construction

Alternative 4 would include construction of all the proposed Project components, with the exception of the proposed roadway improvements, instead implementing the LAMP roadways with modifications to provide access to Terminal 9. This alternative would require the same conveyance improvements for Concourse 0 that would be necessary under the proposed Project. Wastewater generation from construction of Alternative 4 would generally be the same as the proposed Project as the level of development would be similar. As with the proposed Project, construction of Alternative 4 would result in ***less than significant*** impacts on wastewater conveyance and treatment capacity.

5.5.4.9.2.2 Operations

Wastewater generation from operation of Alternative 4 would be the same as the proposed Project because the level of passenger activity would be equivalent. Since sufficient wastewater treatment capacity would be available, as with the proposed Project, operation of Alternative 4 would result in ***less than significant*** impacts on wastewater conveyance and treatment capacity.

5.5.4.9.2.3 Cumulative

Alternative 4 would include the construction and operation of all proposed Project components, except that it would implement the approved LAMP Phase 2 roadway improvements in place of the proposed Project roadway improvements. As discussed above, construction and operation of Alternative 4 would have a lower impact on wastewater than the proposed Project. As discussed in Section 4.9.2, *Wastewater Generation*, the proposed Project would have a cumulatively less than significant impact on wastewater. Because the proposed Project would have a less than significant cumulative impact on wastewater, and because Alternative 4 would have a lower impact on wastewater than the proposed Project, the cumulative impacts from Alternative 4 on wastewater would be ***less than significant***.

5.6 Environmentally Superior Alternative

Section 15126.6(e)(2) of the State CEQA Guidelines indicates that an analysis of alternatives to a proposed project shall identify an environmentally superior alternative among the alternatives evaluated in an EIR. The State CEQA Guidelines also state that, should it be determined that the No Project Alternative is the environmentally superior alternative, the EIR shall identify another environmentally superior alternative among the remaining alternatives. With respect to identifying an environmentally superior alternative among those analyzed in this Draft EIR, the range of potentially feasible alternatives includes Alternative 1: No Project Alternative, Alternative 2: the Concourse 0 Only, Alternative 3: Terminal 9 Only, and Alternative 4: Approved LAMP Roadway Improvements plus Terminal 9 Access Alternative.

A comparative summary of the environmental impacts associated with each alternative and the environmental impacts associated with the proposed Project is provided in **Table 5-15**. A more detailed description of the potential impacts associated with each alternative is provided above. Pursuant to Section 15126.6(c) of the State CEQA Guidelines, the analysis below addresses the ability of the alternatives to "avoid or substantially lessen one or more of the significant effects" of the proposed Project.

5.6.1 Alternative 1 – No Project

As summarized in Table 5-15, implementation of the No Project Alternative would avoid the proposed Project's significant and unavoidable impacts associated with construction-related air pollutant emissions and short-term increases in aircraft noise levels due to temporary runway closures during construction of the airfield improvements. In addition, the No Project Alternative would avoid the significant, but mitigable, impacts on two noise-sensitive receptors (hotels) due to construction noise and would reduce the severity of the significant impacts at three noise-sensitive receptors. With the implementation of the LAMP Phase 2 roadways instead of the roadway improvements associated with the proposed Project, the No Project Alternative would result in a smaller passenger VMT increase compared to the proposed Project; passenger VMT, however, would be significant and unavoidable under both alternatives. Also, the No Project Alternative would avoid the significant, but mitigable, employee VMT impact. The No Project Alternative would also have comparatively lower impacts or no impacts at all for some environmental issue areas where the proposed Project's impacts would be less than significant, such as related to historical resources, wasteful/inefficient consumption of energy, unauthorized releases of hazardous materials during construction, hazard to the public/environment during construction, and conflict with land use plans/policies/regulations. With respect to impacts that would be more severe under the No Project Alternative as compared to the proposed Project, the No Project Alternative would result in a new significant impact with respect to air pollutant concentrations; specifically, operations under the No Project Alternative would exceed the significance threshold for NO_2 concentrations. The impacts for all other environmental issue areas would be generally similar between the No Project Alternative and the proposed Project.

5.6.2 Alternative 2 – Concourse 0 Only

As summarized in Table 5-15, implementation of Alternative 2 would result in the same overall impact conclusions as would the proposed Project. Alternative 2 would not avoid any of the significant and unavoidable impacts of the proposed Project; however, as discussed below, the alternative would result in a significant impact to one pollutant that would not occur under the proposed Project. As discussed in the analysis of impacts for Alternative 2, presented earlier, there are some additional differences from the proposed Project with respect to the nature and severity of impacts under Alternative 2, which are described below.

Table 5-15
Summary Comparison of Impacts Associated with the Proposed Project and Alternatives

Resource Category[1]	Proposed Project (After Mitigation)	Alternative 1: No Project	Alternative 2: Concourse 0 Only	Alternative 3: Terminal 9 Only	Alternative 4: LAMP Roadway Improvements plus Terminal 9 Access
Air Quality and Human Health Risk					
Air Quality					
Emissions (Construction)	Significant and Unavoidable (NO_X) Significant and Unavoidable (CO, VOC, SO_X; short-term – approx. 4.5 months)[2]	Less than Significant	Significant and Unavoidable (NO_X) Significant and Unavoidable (CO, VOC, SO_X; short-term – approx. 4.5 months)[2]	Significant and Unavoidable (NO_X) Significant and Unavoidable (CO, VOC, SO_X; short-term – approx. 4.5 months)[2]	Significant and Unavoidable (NO_X) Significant and Unavoidable (CO, VOC, SO_X; short-term – approx. 4.5 months)[2]
Emissions (Operations)	Significant and Unavoidable (NO_X, SO_X, PM_{10}, $PM_{2.5}$)	Significant and Unavoidable (NO_X, SO_X, PM_{10}, $PM_{2.5}$)	Significant and Unavoidable (NO_X, SO_X, PM_{10}, $PM_{2.5}$)	Significant and Unavoidable (NO_X, SO_X, PM_{10}, $PM_{2.5}$)	Significant and Unavoidable (NO_X, SO_X, PM_{10}, $PM_{2.5}$)
Concentrations (Construction)	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant
Concentrations (Operations)	Significant and Unavoidable (PM_{10})	Significant and Unavoidable (NO_2, PM_{10})	Significant and Unavoidable (NO_2, PM_{10})	Significant and Unavoidable (NO_2, PM_{10})	Significant and Unavoidable (PM_{10})
Human Health Risk					
Cancer Risk	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant
Cancer Burden	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant
Incremental Chronic Hazard	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant
Incremental Acute Hazard	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant
Exceeds Permissible Exposure Limits	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant
Cultural Resources (Historical Resources)					
Substantial Adverse Change in Significance of Historical Resource	Less than Significant	No Impact	Less than Significant	Less than Significant	Less than Significant
Energy					
Wasteful/Inefficient Consumption	Less than Significant	No Impact	Less than Significant	Less than Significant	Less than Significant
Conflict with/Obstruct Energy Efficiency Plans	No Impact	No Impact	No Impact	No Impact	No Impact

Table 5-15
Summary Comparison of Impacts Associated with the Proposed Project and Alternatives

Resource Category[1]	Proposed Project (After Mitigation)	Alternative 1: No Project	Alternative 2: Concourse 0 Only	Alternative 3: Terminal 9 Only	Alternative 4: LAMP Roadway Improvements plus Terminal 9 Access
Greenhouse Gas Emissions					
GHG Generation Impact on Environment	Significant and Unavoidable	Significant and Unavoidable	Significant and Unavoidable	Significant and Unavoidable	Significant and Unavoidable
Conflict with GHG Reduction Plans/Policies/Regulations	Significant and Unavoidable	Significant and Unavoidable	Significant and Unavoidable	Significant and Unavoidable	Significant and Unavoidable
Hazardous Materials					
Unauthorized Release (Construction)	Less than Significant	No Impact	Less than Significant	Less than Significant	Less than Significant
Unauthorized Release (Operations)	No Impact	No Impact	No Impact	No Impact	No Impact
Hazard to Public/Environment (Construction)	Less than Significant	No Impact	Less than Significant	Less than Significant	Less than Significant
Hazard to Public/Environment (Operations)	No Impact	No Impact	No Impact	No Impact	No Impact
Land Use and Planning					
Conflict with Land Use Plans/Policies/Regulations	Less than Significant	No Impact	Less than Significant	Less than Significant	Less than Significant
Noise					
Aircraft Noise					
Increase noise levels at noise-sensitive uses to 65 CNEL or above (Construction)	Significant and Unavoidable (short-term – approx. 4.5 months)[2]	No impact	Significant and Unavoidable (short-term – approx. 4.5 months)[2]	Significant and Unavoidable (short-term – approx. 4.5 months)[2]	Significant and Unavoidable (short-term – approx. 4.5 months)[2]
Increase noise levels at noise-sensitive uses to 65 CNEL or above (Operations)	Significant and Unavoidable	Significant and Unavoidable	Significant and Unavoidable	Significant and Unavoidable	Significant and Unavoidable
Increase by 1.5 dBA or more (Construction)	Significant and Unavoidable (short-term – approx. 4.5 months)[2]	No impact	Significant and Unavoidable (short-term – approx. 4.5 months)[2]	Significant and Unavoidable (short-term – approx. 4.5 months)[2]	Significant and Unavoidable (short-term – approx. 4.5 months)[2]
Increase by 1.5 dBA or more (Operations)	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant
Classroom Learning Disruption	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant
Roadway Traffic Noise					
Operational Roadway Traffic Noise	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant

Table 5-15
Summary Comparison of Impacts Associated with the Proposed Project and Alternatives

Resource Category[1]	Proposed Project (After Mitigation)	Alternative 1: No Project	Alternative 2: Concourse 0 Only	Alternative 3: Terminal 9 Only	Alternative 4: LAMP Roadway Improvements plus Terminal 9 Access
Construction Traffic and Equipment Noise and Vibration					
Construction Traffic Noise	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant
Construction Equipment Noise	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant
Construction Equipment Vibration	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant
Transportation					
Conflict with Transportation Programs/Plans/Ordinances/Policies	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant
VMT per Employee	Less than Significant	No Impact	Less than Significant	Less than Significant	Less than Significant
Daily Passenger VMT	Significant and Unavoidable	Significant and Unavoidable	Significant and Unavoidable	Significant and Unavoidable	Significant and Unavoidable
Induce Additional VMT	Significant and Unavoidable	Significant and Unavoidable	Significant and Unavoidable	Significant and Unavoidable	Significant and Unavoidable
Increase Hazards/Incompatible Use	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant
Utilities					
Water Supply					
Relocation/New Facilities Impacts	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant
Water Demand	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant
Wastewater Generation					
Relocation/New Facilities Impacts	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant
Exceed Wastewater Treatment Capacity	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant

Source: CDM Smith, August 2020.

Notes:
1 Impacts represent both construction and operations, unless otherwise noted.
2 Short-term impacts would result from temporary runway closures during construction.

Under Alternative 2, Terminal 9 would not be constructed and, therefore, there would be comparatively less overall construction-related air pollutant emissions; however, Alternative 2 would still result in significant air pollutant emissions impacts, including impacts, associated with the construction-related temporary runway closures. From an operations standpoint, Alternative 2 would have a comparatively worse impact related to air pollutant concentrations than the proposed Project because there would be an exceedance of NO_2 concentrations that would not otherwise occur under the proposed Project. This would be a new significant impact for this pollutant and, as such, would exacerbate the significant and unavoidable operations-related air quality impact. Human health risk impacts under Alternative 2 would be less than those of the proposed Project relative to construction because of less overall construction activity, but would be the same relative to operations-related impacts, all of which would be less than significant. Energy consumption under Alternative 2 would be less than the proposed Project because there would be no Terminal 9. GHG emissions associated with operation of Alternative 2 would be higher than those of the proposed Project because the taxi/idle times for aircraft operations would be comparatively greater, which would result in more GHG emissions. As such, this would exacerbate the significant and unavoidable operations-related GHG impact. Alternative 2 would result in the same significant, unavoidable impacts associated with aircraft noise due to the construction-related temporary runway closures as would the proposed Project. Without the development of Terminal 9, Alternative 2 would avoid a significant construction equipment noise impact at one noise-sensitive receptor (i.e. hotel), and would reduce the severity of impacts at an additional four sensitive receptors; however, the significant construction equipment noise impacts would be fully mitigated under both the proposed Project and Alternative 2. With regard to transportation impacts, implementation of Alternative 2 would result in slightly greater passenger-related VMT than the proposed Project, which would exacerbate the significant and unavoidable impact associated with the proposed Project. Also, because Alternative 2 would have fewer employees than the proposed Project, the VMT per employee impact would be reduced compared to the proposed Project. With proposed mitigation, the impact related to employment VMT would be reduced to less than significant for both Alternative 2 and the proposed Project. VMT impacts associated with passengers and induced travel would be significant and unavoidable, as they would be for the proposed Project.

5.6.3 Alternative 3 – Terminal 9 Only

As summarized in Table 5-15, implementation of Alternative 3 would result in the same overall impact conclusions as would the proposed Project. Alternative 3 would not avoid any of the significant and unavoidable impacts of the proposed Project; however, as discussed below, the alternative would result in a significant impact to one pollutant that would not occur under the proposed Project. As discussed in the analysis of impacts for Alternative 3, presented earlier, there are some additional differences from the proposed Project with respect to the nature and severity of impacts under Alternative 3, which are described below.

Under Alternative 3, Concourse 0 would not be constructed and, therefore, there would be comparatively less overall construction-related air pollutant emissions; however, Alternative 3 would still result in significant air pollutant emissions impacts, including impacts associated with the construction-related temporary runway closures. From an operations standpoint, Alternative 3 would have a comparatively worse impact related to air pollutant concentrations than the proposed Project because there would be an exceedance of NO_2 concentrations that would not otherwise occur under the proposed Project. This would be a new significant impact for this pollutant and, as such, would exacerbate the significant and unavoidable operations-related air quality impact. Human health risk impacts under Alternative 3 would be less than those of the proposed Project relative to construction because of less overall construction activity, but would be the same relative to operations-related impacts, all of which would be less than significant. Energy consumption under Alternative 3 would be less than the proposed Project because there would be no Concourse 0. GHG emissions associated with operation of Alternative 3 would be higher than those of the

proposed Project because the taxi/idle times for aircraft operations would be comparatively greater, which would result in more GHG emissions. As such, this would exacerbate the significant and unavoidable operations-related GHG impact. Alternative 3 would result in the same significant, unavoidable impacts associated with aircraft noise due to the construction-related temporary runway closures as would the proposed Project. Without the development of Concourse 0, Alternative 3 would reduce the severity of significant construction noise impacts at three noise-sensitive receptors (i.e., hotels); however, those significant noise impacts would be fully mitigated under both the proposed Project and Alternative 3. With regard to transportation impacts, implementation of Alternative 3 would result in slightly lower passenger-related VMT than the proposed Project. Also, because Alternative 3 would have fewer employees than the proposed Project, the VMT per employee impact would be reduced compared to the proposed Project. With proposed mitigation, the impact related to employment VMT would be reduced to less than significant for both Alternative 3 and the proposed Project. VMT impacts associated with passengers and induced travel would be significant and unavoidable, as they would be for the proposed Project.

5.6.4 Alternative 4 – Approved LAMP Roadway Improvements plus Terminal 9 Access

As summarized in Table 5-15, implementation of Alternative 4 would result in the same impact conclusions as would the proposed Project. Alternative 4 would not avoid any of the significant and unavoidable impacts of the proposed Project, although it would reduce the severity of some impacts, as described below.

The construction-related impacts associated with Alternative 4 would be less than those of the proposed Project because the landside (roadway) improvements proposed under this alternative would be less extensive than those of the proposed Project. Nevertheless, Alternative 4 would result in the same significant, unavoidable impacts associated with construction air pollutant emissions, including impacts associated with the construction-related temporary runway closures. Human health risk impacts under Alternative 4 would be slightly less than those of the proposed Project relative to construction because of less overall construction activity, but would be the same relative to operations-related impacts, all of which would be less than significant. GHG emissions associated with Alternative 4 would be similar to the proposed Project. Alternative 4 would result in the same significant, unavoidable impacts associated with aircraft noise due to the construction-related temporary runway closures as would the proposed Project. Implementation of the LAMP Phase 2 roadways in lieu of the proposed Project roadways under Alternative 4 would reduce the severity of the significant construction noise impact at one noise-sensitive receptor (i.e., a hotel); however, that significant noise impact would be fully mitigated under the both proposed Project and Alternative 4. Another difference in impacts between the two development scenarios is related to VMT. Implementation of Alternative 4 would result in slightly lower passenger-related VMT than the proposed Project, which would reduce the severity of this significant and unavoidable impact. VMT impacts associated with passengers and induced travel would be significant and unavoidable, as they would be for the proposed Project.

5.6.5 Environmentally Superior Alternative

Alternative 1, the No Project Alternative, is the Environmentally Superior Alternative based on the fact that it would avoid several of the significant and unavoidable impacts of the proposed Project, although it would also result in a new significant impact to one pollutant during operations.

Alternative 4, the Approved LAMP Roadway Improvements plus Terminal 9 Access, is the next best Environmentally Superior Alternative. Alternative 4 would reduce the severity of a significant but mitigable impact related to construction noise and would slightly reduce the severity of the significant and unavoidable impact associated with increased passenger VMT.

While Alternatives 2 and 3 would provide notable benefits relative to reducing, but not avoiding, significant construction-related impacts, some of the key reductions in construction-related impacts would be offset by increased operational impacts, including some that would exacerbate significant and unavoidable impacts. Specifically, although implementation of Alternative 2 or Alternative 3 would help reduce construction-related air pollutant emissions, those reductions during construction would be offset by a new and more severe long-term significant impact associated with operations-related pollutant concentrations (i.e., operations-related NO_2 exceedance and increased GHG emissions) that would not occur with the proposed Project.

6. OTHER ENVIRONMENTAL CONSIDERATIONS

6.1 Significant Unavoidable Impacts

Section 15126.2(c) of the State CEQA Guidelines requires that an EIR describe significant environmental impacts that cannot be avoided, including impacts that can be mitigated but not reduced to a less than significant level. Chapter 4 of this EIR provides detailed analyses of the environmental topics identified in the Initial Study, prepared in April 2019, as having the potential to result in significant impacts with implementation of the LAX Airfield and Terminal Modernization Project. The impacts that cannot be mitigated to a level that is less than significant are identified below. As discussed in Chapter 4, *Environmental Impact Analysis*, for most environmental topics evaluated in the EIR, an existing conditions baseline was used as a basis for determining Project impacts. As also discussed in Chapter 4, changes in future aircraft and passenger activity compared to existing baseline conditions are attributable to growth in activity anticipated to occur at LAX by 2028 with or without the proposed Project. Therefore, some of the significant unavoidable impacts associated with proposed Project operations identified below would occur, or would partially occur, even without Project implementation.

Air Quality

- Construction emissions (Project-related and cumulatively considerable contributions) of the following pollutants:
  - Carbon monoxide (CO) (for two 4.5-month periods)
  - Volatile organic compounds (VOC) (for two 4.5-month periods)
  - Nitrogen oxides (NO_X)
  - Sulfur oxides (SO_X) (for two 4.5-month periods)
- Operational emissions (Project-related and cumulatively considerable contributions) of the following pollutants:
  - NO_X
  - SO_X
  - Respirable particulate matter (PM_{10})
  - Fine particulate matter ($PM_{2.5}$)
- Operational concentrations (Project-related and cumulatively considerable contributions) of the following pollutants:
  - PM_{10}

Greenhouse Gas Emissions

- Net increase in GHG emissions from construction and operations, combined
- Cumulatively considerable contribution to GHG emissions
- Project-related inconsistency with plans/policies related to GHG emission reductions

Noise

- Aircraft Noise
  - Construction
    - Increased noise levels at exterior use areas of noise-sensitive uses to 65 CNEL or above (for two 4.5-month periods)
    - Temporary increase in aircraft noise levels of 1.5 dBA or more within the 65 CNEL contour compared to baseline conditions (for two 4.5-month periods)
  - Operations
    - Increased noise levels at exterior use areas of noise-sensitive uses to 65 CNEL or above

Transportation

- Passenger VMT
- Short-term and Long-term induced VMT
- Cumulatively considerable contribution to VMT impacts

6.2 Significant Irreversible Environmental Changes

According to the State CEQA Guidelines, an EIR is required to evaluate significant irreversible environmental changes and any irretrievable commitment of resources that would be caused by implementation of the proposed project to assure consumption of such resources is justified. Specifically, as stated in CEQA Guidelines Section 15126.2(d):

> Uses of nonrenewable resources during the initial and continued phases of the project may be irreversible since a large commitment of such resources makes removal or nonuse thereafter unlikely. Primary impacts and, particularly, secondary impacts (such as highway improvement which provides access to a previously inaccessible area) generally commit future generations to similar uses. Also irreversible damage can result from environmental accidents associated with the project. Irretrievable commitments of resources should be evaluated to assure that such current consumption is justified.

The proposed Project would result in the long-term commitment of land to airport uses. The vast majority of the land proposed to be used for the proposed Project is owned by LAWA and already dedicated to the operation of LAX. Several properties, totaling approximately 5 acres, would be acquired as part of the proposed Project. The properties to be acquired are currently developed parcels in an urban area immediately adjacent to airport property. Much of the area to be acquired is used primarily for airport-related public and private parking/commercial vehicle staging, with a portion of one property used for warehousing and educational purposes. The acquired properties would continue to be used for, or converted to, airport-related purposes under the proposed Project.

The proposed Project would necessarily consume slowly-renewable and non-renewable resources. Construction of the proposed Project would require a commitment of resources that would include building materials; fuel for construction equipment and machinery; fuel for the transportation of materials, construction workers, and vendors to and from the Project site; and water. Construction would require the consumption of resources that are non-replenishable or which may renew so slowly that they are considered to be non-renewable. These resources would include raw materials in steel, metals such

as copper and lead, aggregate materials such as sand and stone used in concrete and asphalt, petrochemical construction materials such as plastics, and water.

Operation of the proposed Project would similarly result in consumption of non-renewable resources including electricity, natural gas, transportation-related fuels, and water. This would represent a loss of non-renewable resources, which are generally not retrievable.

The proposed Project would comply with all regulatory requirements related to resource efficiency (fuels, electricity, natural gas, water) during construction and operation, such as Title 24 energy standards, the California Green Building Standards Code (CALGreen), and the City of Los Angeles Green Building Code. In addition, the Project would comply with the LAWA Sustainable Design and Construction Policy, which incorporates measures that can reduce consumption of non-renewable resources during both construction and operation.[1] For example, the Policy requires a minimum of LEED® Silver certification for eligible buildings, which, when applied to Concourse 0 and Terminal 9, would result in lower consumption of energy and water, among other benefits. As evaluated and discussed in Section 4.3, *Energy*, and Section 4.9.1, *Water Supply*, although the proposed Project would result in the consumption of energy and water during construction and operation, the Project's impacts on these resources would be less than significant.

Based on the above, the use of non-renewable resources from construction and operation of the proposed Project would not result in irreversible significant effects on the environment.

6.3 Growth Inducing Impacts

Section 15126.2(e) of the State CEQA Guidelines requires an EIR to discuss the growth inducing impacts of the proposed project. An EIR must discuss the ways in which a project could directly or indirectly foster economic or population growth or the construction of additional housing in the surrounding environment. Growth inducing impacts include the removal of obstacles to population growth, and population growth that requires new community service facilities, the construction of which could cause significant environmental effects. Characteristics of a project that may encourage or facilitate other activities that could have a significant environmental effect either individually or cumulatively must also be discussed. Also, growth must not be assumed as beneficial, detrimental, or of little significance to the environment.

6.3.1 Population, Housing, and Employment Growth

As discussed in Section XIV, *Population and Housing*, of the Initial Study for the proposed Project (included as **Appendix A** of this EIR), the proposed Project would not include any temporary or permanent residential development that would induce population growth directly through the construction of housing.

As described in Chapter 2, *Description of the Proposed Project,* various roadway and utility improvements are proposed to support operations of the Project facilities and to provide efficient roadway circulation. Although the Project proposes roadway and utility improvements to existing roads and infrastructure, it would not involve the extension of roads or other infrastructure into undeveloped areas. Therefore, the proposed Project would not indirectly induce population growth through the extension of roads or other infrastructure into undeveloped areas.

[1] City of Los Angeles, Los Angeles World Airports, *LAWA Sustainable Design and Construction Policy*, September 7, 2017. Available: https://www.lawa.org/-/media/lawa-web/tenants411/file/lawa-sustainable-design-and-construction-policy.ashx.

Development of the proposed Project would generate construction jobs between years 2021 and 2028. LAWA's existing Project Labor Agreement (PLA)[2] provides a goal and framework for contractors to ensure that no less than 30 percent of the skilled construction laborers working on a project are qualified local persons residing within the project area. LAWA's construction contracts typically provide additional incentives for contractors to use local construction labor and to provide disadvantaged or unemployed local residents access to construction opportunities. Under LAWA'S PLA, local workers are defined as those who reside in the City of Los Angeles and in the adjacent communities of the Airport Impact Area (AIA). These adjacent communities include Inglewood, Lennox, Hawthorne, and El Segundo. As such, a substantial portion of construction workers would likely commute from the local area and would not require a relocation of their residency as a consequence of the construction job opportunities generated by the proposed Project. Composition of the construction workforce ultimately depends upon the local market availability of skilled construction labor and local contractors when the projects commence. LAWA is investing in workforce development programs, such as HireLAX,[3] to increase local worker availability. Notwithstanding the various programs and incentives to draw from local labor pools, it is anticipated that Project construction would also attract workers from other areas of southern California, as has been the case on other large construction projects completed at LAX over the past several years. In drawing from the larger existing regional labor pool, it is not anticipated that the construction worker needs of the Project would result in a notable growth in population, housing, and employment in southern California.

Although the proposed Project does not include any residential development, there exists the potential for indirect population growth as a result of the employment generated by operation of the proposed Project. As discussed in Section 4.8, *Transportation*, the proposed Project would generate approximately 4,700 permanent jobs. This represents less than 0.1 percent of the total employment in Los Angeles County.[4]

In summary, the proposed Project would not directly or indirectly induce population, housing, or employment growth.

6.3.2 Growth in LAX Passenger Activity Levels

As described in Chapter 2, *Description of the Proposed Project*, forecasts of future passenger activity at LAX include the draft regional aviation growth forecast recently completed by the Southern California Association of Governments (SCAG), which includes a passenger level forecast for LAX, as well as for other commercial airports in the region, and an aviation activity forecast specific to LAX that was completed for LAWA in 2019 by aviation experts Ricondo and Associates in conjunction with the planning for the proposed Project (see **Appendix B.1**).[5] Both of these forecasts project that future increases in passenger activity levels at LAX will occur with or without the proposed Project.

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2 City of Los Angeles, Los Angeles World Airports, *Los Angeles Department of Airports Construction Project Labor Agreement*, November 19, 1999, Extension: January 1, 2001, Updated to Reflect Changes (December 1, 2016). Available: https://www.lawa.org/lawa-employment/lawa-hirelax/project-labor-agreement.

3 City of Los Angeles, Los Angeles World Airports, *HireLAX webpage*. Available: https://www.lawa.org/en/lawa-employment/lawa-hirelax/hirelax, accessed August 26, 2020.

4 State of California, Employment Development Department, *Los Angeles-Long Beach-Glendale Metropolitan Division (Los Angeles County)*, March 27, 2020. Available: https://www.labormarketinfo.edd.ca.gov/file/lfmonth/la$pds.pdf.

5 As noted in Chapter 2, *Description of the Proposed Project,* Section 2.3.1.2, the regional aviation growth forecast prepared by SCAG and the aviation forecast specific to LAX prepared for LAWA were both completed in 2019, prior to the COVID-19 pandemic. SCAG adopted the regional aviation growth forecast as part of the 2020 Regional Transportation Plan/Sustainability Communities Strategy (RTP/SCS), also known as Connect SoCal, for the limited purpose of federal transportation conformity on May 7, 2020. Subsequently, SCAG conducted additional outreach with stakeholders to better understand how Connect SoCal could be affected by COVID-19. The SCAG Regional Council formally adopted Connect SoCal on September 3, 2020 (SCAG, *News Release: SCAG Regional Council formally adopts Connects SoCal*, September 3, 2020. Available: http://scag.ca.gov/Documents/PR-SCAG-ConnectSoCal.pdf). The outreach effort did not result in any revisions to the regional aviation growth forecast. While the pandemic has had a substantial effect on the aviation industry and air travel in general, it is too early (i.e., speculative) to assess the long-term consequences related to aviation forecasts. As such, the existing aviation forecasts for LAX represent the best forecast information currently available.

As described in Section 2.3.1.2, *Projected Future Growth at* LAX, and further detailed in **Appendix B.1** of this EIR, the aviation forecast developed in 2019 for LAX is based on a review of historical data and trends for aviation activity at LAX, as well as at other major commercial passenger airports in the greater Los Angeles Basin, and on the results of a regression analysis based on socioeconomic factors. LAWA's expert aviation forecast determined that annual passenger levels in 2028 (the planning horizon year for the analysis in this EIR) would be approximately 111 million annual passengers (MAP). This passenger activity level is anticipated to be realized with or without the proposed Project because the ability to accommodate the future aviation demand projected for LAX is not dependent on any of the improvements associated with the proposed Project. This projected increase in future passenger activity levels at LAX is within the forecasted growth for LAX presented in the adopted SCAG 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS). The adopted RTP/SCS projects that passenger activity at LAX will grow from 84.5 MAP in 2017 to 127 MAP in 2045.[6] Similar to the 2019 forecast, the activity growth projected for LAX in the RTP/SCS is not dependent on, or influenced by, the improvements associated with the proposed Project, but rather reflects future growth in air travel demand at LAX based on historical trends and socioeconomic factors independent of the Project, as well as forecasts prepared by the FAA.[7] Therefore, the proposed Project improvements, including the development of passenger gates at Concourse 0 and Terminal 9, are not anticipated to result in growth in LAX passenger activity levels beyond what is expected to occur without the proposed Project.

The growth estimated to occur at LAX by 2028, the horizon year assumed for buildout of the proposed Project, is projected to be "unconstrained," meaning that the passenger and aircraft activity levels forecast occur by 2028 would not be constrained (i.e., could be accommodated) by LAX's existing and approved functional components. The key functional components of any airport, including LAX, include: the airfield (including runways and taxiways); the terminals (including terminal facilities and gates); and the landside component (including roadways and terminal roadway curbs). As described in Section 4, *Constrained Demand Scenario*, of **Appendix B.1** of this EIR, a technical analysis of LAX's ability to accommodate continued ongoing growth in future activity determined that the airfield component would become the first component to present potential constraints to such future growth. As the number of aircraft operations would continue to increase in the future, the limitations of the airfield component, defined in terms of the practical capacity of the airfield measured by the amount of annualized average all-weather delay (i.e., the amount of delay each flight operations would experience on an annual average all-weather basis), would start to constrain the growth in operations.[8] Increased airfield congestion would translate to an increase in airfield delays. Based on the number of annual aircraft operations estimated to occur each year up through 2045, it was projected that the potential effects of increasing airfield delays on airfield operations would start becoming evident around 2029, and airfield delays would become increasingly unacceptable around 2031 (as documented in **Appendix B.1** of this EIR) as LAX approaches its airfield practical capacity. While the overall operational capacity of an airport is influenced by each of the three key components – airfield, terminal, and landside – the capacity limit is set by whichever of the three component is the most constrained, which, in the case of LAX, is anticipated to be the airfield (due to limitations of the four-runway airfield system), and not the terminal or landside components. In summary, with our without the proposed Project, future activity levels at LAX are projected to grow

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6 Southern California Association of Governments, *Connect SoCal Technical Report: Transportation System - Aviation and Airport Ground Access,* p. 33, adopted September 3, 2020. Available: https://www.connectsocal.org/Documents/Adopted/0903fConnectSoCal_Aviation-And-Airport-Ground-Access.pdf.

7 Southern California Association of Governments, *Connect SoCal Technical Report: Transportation System - Aviation and Airport Ground Access*, p. 32, adopted September 3, 2020. Available: https://www.connectsocal.org/Documents/Adopted/0903fConnectSoCal_Aviation-And-Airport-Ground-Access.pdf.

8 As described in **Appendix B.1**, the practical capacity of the LAX airfield is defined as the annualized number of aircraft operations that the airfield can accommodate resulting in 15 minutes of annualized average all-weather delay. Consistent with FAA guidance, LAWA selected 15 minutes of annual average all-weather delay per aircraft operation as an indicator beyond which airfield delay may be increasingly unacceptable to airport management and airlines/operators.

unconstrained through the 2028 horizon year for the proposed Project; however, subsequent growth would be constrained by the limitations of LAX's four-runway airfield system.

As described in Chapter 2, *Description of the Proposed Project*, the proposed Project includes roadway improvements that would provide access to Terminal 9 and also serve to reduce congestion on Sepulveda Boulevard by placing airport-related traffic onto new roadways that are exclusive to CTA access (which would prevent CTA-related traffic from backing up onto Sepulveda Boulevard by moving CTA access points on Sepulveda Boulevard away from areas of congestion and by providing more queueing space on new roadway segments separate from Sepulveda Boulevard). Although these improvements would provide landside access to the new Terminal 9, they are not required to provide access to and from the CTA, as such access would still be available with the existing roadways and via the ground transportation system improvements associated with the approved LAX Landside Access Modernization Program. The proposed roadway improvements would not induce growth in airport activity at LAX.

In summary, the forecasted passenger growth is projected to occur with or without the proposed Project and the proposed Project would not directly or indirectly induce LAX passenger growth.

6.3.3 Economic Growth

The proposed airfield, terminal, and landside improvements would support the ongoing modernization of LAX, by enhancing the safety and operational management of the airfield; providing a new concourse and terminal to improve the quality of the passenger experience and efficiency of passenger processing; and improving the roadway system to better route airport-related traffic off of, and away from, the public roads that serve the community - all of which would help LAX to prepare early for the continued aviation growth that is projected by LAWA, SCAG, and the FAA to occur at LAX over the next several decades. Additionally, the nature and timing of improvements included in the proposed Project are integral to Los Angeles' plans to host the 2028 Olympic and Paralympic Games, with LAX serving as the main portal for athletes, dignitaries, and visitors from around the world. Accordingly, implementation of the proposed Project would be likely to stimulate economic growth in the region. As noted in Section 6.3.2 above, the increased passenger level activity projected to occur in 2028 will occur with or without the proposed Project; therefore, the proposed Project would not induce economic growth relative to the volume of passengers traveling through LAX. However, the additional new concessions and additional jobs associated with development and operation of Concourse 0 and Terminal 9 would support economic growth associated with new jobs and business opportunities.

Construction activity associated with development of the proposed Project would directly and indirectly foster economic growth over the multi-year construction period in terms of spending by workers and the provision of goods and services in support of construction. Economic growth resulting from Project-related construction could result in environmental impacts related to increased vehicle travel, increased demands for public services and utilities, and impacts associated with the manufacturing/production of materials. Given the highly urbanized setting of the area around LAX, as well as throughout much of Southern California, and the diverse nature of the improvements to be constructed under the proposed Project, it is not expected that the environmental impacts associated with construction-related economic growth would occur in any one area. In addition, given the regional nature of the LAX service area, it is likely that secondary effects of such economic growth would occur within the frameworks of the general plans of the jurisdictions that comprise the SCAG region. Therefore, impacts associated with economic growth under the proposed Project are expected to be less than significant.

6.4 Less Than Significant Effects

Section 15128 of the State CEQA Guidelines requires that an EIR briefly indicate the reasons that various possible significant effects of a project were determined not to be significant and were therefore not discussed in detail in the EIR. Table 1-2 in Chapter 1, *Introduction and Executive Summary*, identifies the effects of the proposed Project that were determined to be less than significant, based on analysis in this EIR. The Initial Study for the proposed Project, included as **Appendix A** of this EIR, also determined, for the reasons explained therein, that additional effects, including effects on the following resource areas, would result in no impact, or less than significant impacts: aesthetics, agricultural and forestry resources, biological resources, geology and soils, hydrology and water quality, mineral resources, population and housing, public services, recreation, tribal cultural resources, and wildfire.

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7. LIST OF PREPARERS, ORGANIZATIONS AND PERSONS CONSULTED, LIST OF ACRONYMS, AND LIST OF REFERENCES

This chapter contains the following information:

- List of Preparers
- Organizations and Persons Consulted
- List of Acronyms
- List of References

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7.2 Organizations and Persons Consulted

Federal

Federal Aviation Administration
U.S. Environmental Protection Agency

State

State of California Department of Transportation (Caltrans)
Native American Heritage Commission

Native American Tribes

San Gabriel Band of Mission Indians
Gabrielino Tongva Indians of California Tribal Council

Regional

Southern California Association of Governments
South Coast Air Quality Management District

City of Los Angeles

City of Los Angeles Department of Transportation
City of Los Angeles Department of Public Works
City of Los Angeles Department of Water and Power
City of Los Angeles Department of City Planning
Los Angeles Fire Department

Organizations

Alliance for a Regional Solution to Airport Congestion

7.3 List of Acronyms

§	Section/Paragraph
°C	Degrees Celsius
°F	Degrees Fahrenheit
AAD	Average Annual Day
AAM	Annual Arithmetic Mean
AB	Assembly Bill
AC	Advisory Circular
ACA	Airport Carbon Accreditation
ACHP	Advisory Council on Historic Preservation
ACI	Airports Council International
ADA	Americans with Disabilities Act
ADAP	Airport Development Aid Program
ADG	Airplane Design Group
ADT	Average Daily Traffic
AEDT	Aviation Environmental Design Tool
AEP	Association of Environmental Professionals
AERMOD	American Meteorological Society (AMS)/EPA Regulatory Model AMS/EPA Regulatory Model
AFFF	Aqueous Film-forming Foam
AF/Y	Acre-feet per year
AIA	Airport Impact Area

AIA	Airport Influence Area
AIP	Airport Improvement Program
ALP	Airport Layout Plan
ALUC	Airport Land Use Commission
ALUCP	Airport Land Use Compatibility Plan
ALUP	Airport Land Use Plan
AMC	Airport Metro Connector
ANCA	Airport Noise and Capacity Act of 1990
ANCLUC	Airport Noise Control and Land Use Compatibility
ANMP	Aircraft Noise Mitigation Program
ANOMS	Aircraft Noise and Operations Maintenance System
ANSI	American National Standards Institute
AOA	Airport Operations Area
APD	Airport Police Division (LAWA)
APE	Area of Potential Effects
APM	Automated People Mover
APU	Auxiliary Power Units
AQIM	Air Quality Improvement Measures
AQMP	Air Quality Management Plan
ASA	Acoustical Society of America
ASNA	Aviation Safety and Noise Abatement Act of 1979
ASOS	Automated Surface Observing System
ATC	Air Traffic Control
ATCT	Airport Traffic Control Tower
ATMP	Airfield and Terminal Modernization Project
ATNS	Air Traffic Noise Screening
ATP	Archaeological Treatment Plan
ATSAC	Automated Traffic Surveillance and Control
ATSDR	Agency for Toxic Substance and Disease Registry
AvGas	Aviation Gasoline
AVO	Average Vehicle Occupancy
AWPF	Advanced Water Purification Facility
BAAQMD	Bay Area Air Quality Management District
BCT	City of Redondo Beach – Beach Cities Transit

BEN	Bicycle Enhanced Network
BenMAP-CE	Benefits Mapping and Analysis Program, Community Edition
BMP	Best Management Practices
BOAC	Board of Airport Commissioners
BRT	Bus Rapid Transit
BUR	Hollywood-Burbank Airport
C_2F_6	Perfluoroethane
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CAEP	Committee on Aviation Environmental Protection
CAFE	Corporate Average Fuel Economy
CAGR	Compounded Annual Growth Rate
CalEEMod	California Emissions Estimator Model
CalEPA	California Environmental Protection Agency
CALGreen	California Green Building Standards Code
California Register	California Register of Historical Resources
CALM	Coordination and Logistics Management
CalOSHA	California Occupational Safety and Health Administration
Caltrans	California Department of Transportation
CAMx	Comprehensive Air Quality Model with extensions
CAO	Cleanup and Abatement Orders
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CBP	Customs and Border Protection
CC	Culver City Bus
CCAA	California Clean Air Act
CCAR	California Climate Action Registry
CCR	California Code of Regulations
CCTV	Closed-circuit Television
CDO	Cease and Desist Order
CE	Commuter Express (LADOT)
CEC	California Energy Commission
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act

CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFC	Chlorofluorocarbon
CFR	Code of Federal Regulations
cfs	Cubic Feet per Second
CF_4	Perfluromethane
CH_4	Methane
CMAQ	Community Multiscale Air Quality Model
CNEL	Community Noise Equivalent Level
CNG	Compressed Natural Gas
CNRA	California Natural Resources Agency
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalent
COG	Council of Governments
CONRAC	Consolidated Rental Car Facility
CORSIA	Carbon Offsetting and Reduction Scheme for International Aviation
CPHI	California Points of Historical Interest
CPS	Cleanup Program Sites
CPUC	California Public Utilities Commission
CTA	Central Terminal Area
CTC	California Transportation Commission
CTCSC	Coastal Transportation Corridor Specific Plan
CUP	Central Utility Plant
dB	Decibels
dBA	A-weighted Decibel
DCH	Design and Construction Handbook
DCTWRP	Donald C. Tillman Water Reclamation Plant
DDFS	Design Day Flight Schedules
DNL	Day Night Average Sound Level
DOE	Department of Energy
DPM	Diesel Particulate Matter
DS	Distribution Station
DTSC	Department of Toxic Substances Control
DWR	Department of Water Resources

EA	Environmental Assessment
EBEWE	Existing Buildings Energy and Water Efficiency
ECLWRF	Edward C. Little Water Recycling Facility
EDR	Environmental Data Resources Inc.
EIR	Environmental Impact Report
EO	Executive Order
EPG	Environmental Programs Group
ESHA	Ecologically Sensitive Habitat Area
EV	Electric Vehicle
FAA	Federal Aviation Administration
FAR	Federal Aviation Regulation
FedEx	Federal Express
FEMP	Federal Energy Management Program
FHWA	Federal Highway Administration
FICAN	Federal Interagency Committee on Aviation Noise
FICON	Federal Interagency Committee on Noise
FIS	Federal Inspection Services
FQP	Fly Quieter Program
ft	Feet
FTA	Federal Transit Administration
FY	Fiscal Year
g/mi	Grams per Mile
GA	General Aviation
GAV	Ground Access Vehicles
GBMP	Groundwater Basins Master Plan
GCC	Global Climate Change
GHG	Greenhouse Gas
gpd	Gallons Per Day
GPS	Global Positioning System
GPU	Ground Power Unit
GRP	Global Reporting Protocol
GSE	Ground Support Equipment
GWP	Global Warming Potential
HARP2	Hot Spots Analysis and Reporting Program Version 2

HFCs	Hydrofluorocarbons
HHRA	Human Health Risk Assessment
HI	Hazard Index
HIN	High-injury Network
HQ	Hazard Quotient
HRG	Historic Resources Group
HRI	Historic Resources Inventory
HSAA	Hazardous Substance Account Act
HSWA	Hazardous and Solid Waste Amendments
HWRP	Hyperion Water Reclamation Plant
I-	Interstate
IBEC	Inglewood Basketball and Entertainment Center
ICAO	International Civil Aviation Organization
ICLEI	International Council for Local Environmental Initiatives
in/sec	inches per second
IPCC	Intergovernmental Panel on Climate Change
IPL	Imperial County Airport
IRP	Integrated Resource Plan
ITF	Intermodal Transportation Facility
ITS	Intelligent Transportation Systems
km	kilometer
kV	Kilovolt
kWh	Kilowatt Hours
LAA	Los Angeles Aqueduct
LADOT	City of Los Angeles Department of Transportation
LADOT CE	Los Angeles Department of Transportation Commuter Express
LADWP	Los Angeles Department of Water and Power
LAE	3 dB-wide sound exposure level
LAFD	Los Angeles Fire Department
LAGBC	Los Angeles Green Building Code
LAMC	Los Angeles Municipal Code
LAMP	Landside Access Modernization Program
LARWQCB	Los Angeles Regional Water Quality Control Board
LASAN	City of Los Angeles Bureau of Sanitation

LAWA	Los Angeles World Airports
LAWA PD	Los Angeles World Airports Police Division
LAX	Los Angeles International Airport
lbs/day	Pounds per Day
lbs/hr	Pounds per Hour
LCFS	Low Carbon Fuel Standard
L_{dn}	Day Night Average Sound Level
LEED®	Leadership in Energy and Environmental Design
L_{eq}	Equivalent Sound Level
LEV	Low Emission Vehicle
LGB	Long Beach Airport
LGOP	Local Government Operations Protocol
LHA	Lifetime Health Advisory
LID	Low Impact Development
L_{max}	Maximum Noise Level
LNG	Liquefied Natural Gas
LOS	Level of Service
LRT	Light Rail Transit
LRTP	Long Range Transportation Plan
LTO	Landing and Takeoff
LUST	Leaking Underground Storage Tank
m/s	Meters per Second
MAP	Million Annual Passengers
MATES	Multiple Air Toxics Exposure Study
MCL	Maximum Contaminant Levels
MEI	Maximally Exposed Individual
MEIR	Maximally Exposed Individual Resident
Metro	Los Angeles County Metropolitan Transportation Authority
mg/m3	Milligrams per Cubic Meter
mgd	Million Gallons per Day
MM	Mitigation Measure
MMBtu	Million British Thermal Units
MMcf	Million cubic feet
$MMTCO_2e$	Million Metric Tons of CO_2 Equivalent

MOC	Maintenance Operations Center
MOT	Maintenance of Traffic
MOU	Memorandum of Understanding
MOVES	Motor Vehicle Emission Simulator
mpg	Miles per Gallon
mph	Miles per Hour
MPO	Metropolitan Planning Organization
MRO	Aircraft/Maintenance/Overhaul
MRV	Monitoring, Reporting, and Verification
MSC	Midfield Satellite Concourse
MT	Metric Tons
$MTCO_2e$	Metric Tons of CO_2 Equivalent
MUTCD	Manual on Uniform Traffic Control Devices
MW	Megawatt
MW	Monitoring Well
MWD	Metropolitan Water District of Southern California
MWh	Megawatt hours
NAAQS	National Ambient Air Quality Standards
NAPL	Non-aqueous phase liquid
NASP	National Airspace System Plan
NATA	National-Scale Air Toxics Assessment
National Register	National Register of Historic Places
NCP	Noise Compatibility Program
NEM	Noise Exposure Map
NEN	Neighborhood Enhanced Network
NEPA	National Environmental Policy Act
NextGen	Next Generation Air Transportation System
NHPA	National Historic Preservation Act
NHTSA	National Highway Traffic Safety Administration
NLR	Noise Level Reduction
NM	Nautical Miles
NO_2	Nitrogen Dioxide
N_2O	Nitrous Oxide
NOP	Notice of Preparation

NO_X	Nitrogen Oxides
NPL	National Priorities List
O&D	Origin and Destination
O_3	Ozone
OEHHA	Office of Environmental Health Hazard Assessment
OES	Office of Emergency Services
OHP	Office of Historic Preservation
ONT	Ontario International Airport
OPR	Office of Planning and Research
OSHA	Occupational Safety and Health Act
OXR	Oxnard Airport
PAPI	Precision Approach Path Indicator
PARTNER	Partnership for Air Transportation Noise and Emissions Reduction
Pb	Lead
PED	Pedestrian Enhanced Districts
PEIR	Program Environmental Impact Report
PELs	Permissible Exposure Limits
PeMS	(Freeway) Performance Measurement System
PFAS	Per- and Poly-fluoroalkyl Substances
PFC	Passenger Facility Charges
PFCs	Perfluorocarbons
PFOA	Perfluorooctanoic Acid
PFOS	Perfluorooctanesulfonic Acid
PLA	Project Labor Agreement
pLAn	City of Los Angeles' Sustainable City Plan
PM	Particulate Matter
PM_{10}	Particulate Matter with an aerodynamic diameter less than or equal to 10 micrometers
$PM_{2.5}$	Particulate Matter with an aerodynamic diameter less than or equal to 2.5 micrometers
PMAD	Peak Month Average Day
PMD	Palmdale Regional Airport
ppb	Parts per Billion
ppm	Parts per Million
ppt	Parts per Trillion

PPV	Peak Particle Velocity
PRC	Public Resources Code
PSP	Palm Springs International Airport
RCNM	Roadway Construction Noise Model
RCRA	Resource Conservation and Recovery Act
REL	Runway Entrance Lights
RELs	Reference Exposure Levels
RGA	Recovered Government Archive
RIITS	Regional Integration of Intelligent Transportation Systems
RIV	March Air Reserve Base
ROG	Reactive Organic Gases
RPS	Renewable (Energy) Portfolio Standard
RPZ	Runway Protection Zone
RS-N	Receiving Station "N"
RTIP	Regional Transportation Improvement Plan
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
RTPA	Regional Transportation Planning Agency
RWQCB	Regional Water Quality Control Board
SAFE	Safer Affordable Fuel-Efficient
SAP	Sustainability Action Plan
SAR	Second Assessment Report
SARPs	Standards and Recommended Practices
SB	Senate Bill
SBD	San Bernardino International Airport
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
scf	standard cubic feet
SCH	State Clearinghouse [Number]
SED	Socio-Economic and Demographic
SEL	Sound Exposure Level
SENEL	Single Event Noise Exposure Level
sf	Square Feet
SF_6	Sulfur Hexafluoride
SHPO	State Historic Preservation Officer

SIMMOD	Airport Simulation Models
SIP	State Implementation Plan
SJC	San Jose International Airport
SLIC	Spills, Leaks, Investigations, and Cleanups
SLTRP	Strategic Long-Term Resource Plan
SM	Santa Monica Big Blue Bus
SNA	John Wayne/Orange County Airport
SoCalGas	Southern California Gas Company
SO_2	Sulfur Dioxide
SO_X	Sulfur Oxides
SR	State Route
SRTP	Short Range Transportation Plan
SSMP	Sewer System Management Plan
SUSMP	Standard Urban Stormwater Mitigation Plan
SVE	Soil Vapor Extraction
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TA	Time Above
TAC	Toxic Air Contaminants
TAG	Transportation Assessment Guidelines (City of Los Angeles)
TAZ	Traffic Analysis Zone
TBIT	Tom Bradley International Terminal
TDF	Travel Demand Forecast
TDM	Transportation Demand Management
TDM	Travel Demand Management
TEN	Transit Enhanced Network
THL	Takeoff Hold Lights
TNC	Transportation Network Companies
TNM	Traffic Noise Model
TOC	Transit-oriented Community
TOG	Total Organic Gases
TPY	Tons per Year
TRAVIS	Traffic and Automated Vehicle Identification System
TSA	Transportation Security Administration

TT	Torrance Transit
UAL	United Airlines
µg/kg	Microgram per kilogram
µg/m^3	Micrograms per Cubic Meter
UNFCCC	United Nations Framework Convention on Climate Change
USC	United States Code
USEPA	United States Environmental Protection Agency
USG	United States Government
USGBC	U.S. Green Building Council
USGS	U.S. Geological Survey
UST	Underground Storage Tank
UWMP	Urban Water Management Plan
VALE	Voluntary Airport Low Emissions
VCV	Southern California Logistics Airport/Victorville
VEN	Vehicle Enhanced Network
VER	Vapor Enhanced Recovery
VMT	Vehicle Miles Traveled
VOC	Volatile Organic Compounds
WAMA	West Aircraft Maintenance Area
WBMWD	West Basin Municipal Water District
WRD	Water Replenishment District
WSA	Water Supply Assessment
ZEV	Zero Emission Vehicles
ZIMAS	Zone Info and Map Access System

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